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A HISTORY

OF THE

ENGLISH RAILWAY;

ITS SOCIAL RELATIONS AND REVELATIONS.

1820—1845.

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BY JOHN FRANCIS;

AUTHOR OF "THE HISTORY OF THE BANK OF ENGLAND; ITS TIMES AND TRADITIONS;" AND "CHRONICLES AND CHARACTERS OF THE STOCK EXCHANGE."

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VOL. I.

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INSCRIBED,

BY PERMISSION,

TO GEORGE CARR GLYN, Esq., M.P.,

CHAIRMAN OF THE LONDON AND NORTH-WESTERN RAILWAY.

THESE VOLUMES, BEING AN ATTEMPT TO INDICATE THE ORIGIN AND PROGRESS OF THAT POWER IN WHICH HE HAS OCCUPIED SO PROMINENT A POSITION, ARE TO GEORGE CARR GLYN, THE EARLY AND EFFICIENT ALLY OF THE ENGLISH RAILWAY SYSTEM, RESPECTFULLY DEDICATED BY

HIS MOST OBEDIENT SERVANT,

JOHN FRANCIS.

PREFACE.

THE present volumes form an attempt to develope the origin and progress of the railway system, and, by blending with it personal sketches of many who have joined the new power—of Stephenson, indelibly associated with the mechanism of the rail; of Brunel, whose variation of the gauge has produced such serious and even sad results; of Peto, whose efforts for the railway labourer are so characteristically benevolent; of Glyn, whose name will be long remembered for his bold expression of opinion; and of Hudson, whose career and character are honestly given—to add a general interest to the subject.

The Liverpool and Manchester railway is no uninstructive record: the progress of the metropolitan lines—which are chiefly treated in detail—present no unpicturesque career: the excitement of 1836—from which period it is necessary to generalise the history—the crude attempts at legislation; the battles between the ministry and the new interest; the

marked progress and power of the latter; the wrongs of the railway labourer; the frauds, perjuries, and falsehoods of 1845—appear to the writer to form no unimportant portion of commercial history.

This is not a statistical work. For those who desire the latter there is Mr. Scrivenor's elaborate and excellent "Railways of the United Kingdom;" there are Mr. Whitehead's important pamphlets on "Railway Investment;" there is Dr. Lardner's "Railway Economy," a book which should be in the hands of all who are interested in the subject; with many others of a similar character. The present volumes aspire only to record the rise and progress of that discovery, one phase of which was a delusion as popular as any chronicled in Dr. Mackay's interesting work.

The address of the writer is appended, as any information in correction, or in addition, will be thankfully acknowledged; particularly should it refer to the important period which ranges from 1845 to 1851.

Shooter's Hill,
Kent, 1851.

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HISTORY

OF THE

ENGLISH RAILWAY.

CHAPTER I.

ROADS DURING THE AGE OF CHIVALRY.—DANGERS OF TRAVELLING.—EXPENSE OF TRAVELLING—DIFFICULTY OF CONVEYING GOODS.—THE STREETS OF LONDON—FIRST LEGISLATIVE ENACTMENT.—FORCED LABOUR.—PRIMEVAL STATE OF THE COUNTRY VILLAGE.—INFORMATION DIFFICULT TO TRANSMIT.—TRAVELLING IN COMPANY.—THE PACK-HORSE.—STAGE COACHES.—OPINIONS CONCERNING THEM.—JOURNEY TO CAMBRIDGE.—THE PEER IN 1750 AND 1850.—IMPROVEMENT IN THE ROADS OCCASIONED BY CIVIL WAR.—THE IMPORTANCE OF THE PEDLER IN COMMUNICATION.—FIRST TURNPIKE GATES.—LAND TAX.—THE HIGHWAYMAN.—THE ROADS OF LANCASHIRE.—THE ROADS OF NEWCASTLE.—IMPROVEMENT OF THE HIGHWAY.—RAIL-ROADS.

THERE are few subjects more interesting to the antiquarian than the science of locomotion; nor is any topic more important to the political economist than the roads of England. By them he traces her social progress, and watching them as, gradually formed for necessary intercourse, they increase with the demand they supply, he regards them as at once a cause and

a consequence of civilization, and rejoices in the prosperity they promote.

To that imperial people who colonized when they had conquered, England owes her first road in 415. The arts went hand in hand with arms; the Roman camp required the Roman way; and it has been remarked that the general direction of those works which excite and astonish the beholder is closely allied to that of the modern railway.

In those which have been termed the dark ages, the roads of the country, if so they may be called, were beset with danger and delay. The age of chivalry was a terrible era for the wayfarer. The great highway of Watling-street was beset, in the reign of Edward the Confessor, by violent men. Outlaws, dwelling in the woods and forests around it, came suddenly on the traveller, deprived him of his all, and, with the booty they had won, as suddenly retreated to the forest or the fastness of their solitary home. The cross of the pilgrim was no protection against their violence; the hood of the monk was no safeguard against their rapacity. Endeavours were made to remedy the evil: armed men were paid by Abbot Leofstan, of St. Alban's, to scour the forest and penetrate its depths, to punish the

marauder, or to defend the wayfarer. A worse evil than death, however, sometimes awaited the passenger: protected by a ransom if rich, he was sold as a slave if poor.

The Norman baron was probably the first recipient of tolls in England; and there is little doubt that where the traveller was stored with gold, or the merchant with goods, the lowest dungeon of the castle formed at once a vault for the treasure and a grave for its possessor. It was necessary, therefore, to move in company; and from this custom arose that charming picture of English locomotive life which Chaucer drew, and which Stothard has reproduced.

Long journeys were necessarily performed on horseback. The Anglo-Saxon, indeed, occasionally used a species of carriage; and William of Malmesbury, with Matthew Paris, mention the horse-litter, which was probably used for invalids. The queen of Northumberland also is spoken of at an earlier period as travelling in her carriage; the form of the conveyance being, of course, conjectural. The difficulty of journeying alone in safety entailed great expense. In the twelfth century, Peter of Blois said the yearly proceeds of a stall in Salisbury Cathedral were less

than the cost of a visit from Salisbury to London. In the thirteenth, the bishop of Hereford, with all the pomp and power attending an ecclesiastic of the period, could not proceed on his journey in Wantling without additional assistance. In the fourteenth century men were licensed to let out horses. From Southwark to Rochester the regular fare was twelve pence. From Canterbury to Dover six-pence was charged. Expeditious travelling was then, as now, only comparative. The mother of Richard II. came in one day from Canterbury to London; but this was during the insurrection of Wat Tyler, performed, too, under the influence of fear, as she "never durst tarry on the way," and the exertion was so great as to cause a severe indisposition. The herald of the king of Scotland was allowed forty days to proceed from London to the border; and twenty miles a day, if indeed the wayfarer were so fortunate as to reach his journey's end, was regarded as good and expeditious travelling.

The effect of roads so difficult to traverse was seriously and severely felt in the carriage of commodities. The conveyance of goods was so expensive that inland trade suffered in proportion. The ma-

chines which were employed to convey produce, rude and rough in their construction, were as heavy as they were clumsy. Even if the roads were tolerable, it was difficult to move them; but if bad, they were either swallowed in bogs, or fell into dykes: sometimes, indeed, they sunk into the miry road so deep, that there was little chance of escape until the warm weather and the hot sun made their release easy. Markets were inaccessible for months together, and the fruits of the earth rotted in one place, while a few miles off the supply fell far short of the demand. Long after coals were procured in Newcastle, London, even then a capital of the first importance, was contented with wood or turf, owing to the impossibility of transmission. The tolls were as heavy as the roads were bad. The thoroughfare winding through the wooded domain of the baron, or by the rich pasture land of the abbot, was charged with payments which formed an additional tax on commerce and communication. It was found cheaper to export abroad than to convey produce from the north to the south of England. It was easier to send merchandise from the capital to Portugal, than to convey it from Norwich to London. Many important parts of England were

as inaccessible as the Highlands of Scotland. Coal, manure, and grain could only be carried on the backs of cattle. If waggons were ever used, eight horses were necessary to draw two tons; the expense of this, when the time taken to perform the journey is considered, was a terrible addition to the cost of the article.

"For a succession of ages," says Dr. Lardner, "the little intercourse that was maintained between the various parts of Great Britain was effected almost exclusively by rude footpaths, traversed by pedestrians, or at best by horses. Hills were surmounted, valleys crossed, and rivers forded by these rude agents of transport, in the same manner as the savage and settler of the backwoods of America or the slopes of the Rocky Mountains communicate with each other."

The roads were also exceedingly tortuous. If the hill which crossed his path were high, the passenger traversed its base; if the river were deep, he sought a shallower fording-place; if the path were too rugged, he tried a longer but smoother passage. The travelling merchants, an important ingredient in country comfort, moved in company with their fellows. From town to town, through wood and through glade, they

wandered in pleasant association, seeking in each other's society mutual aid and mutual protection. Pilgrims also availed themselves of the safety and society of the trader's convoy; nor was their pilgrimage less agreeable that the song of the merchant or the strain of the minstrel excited their mirth and cheered their way.

These were some of the modes of transport at this early period; nor was it until 1565, according to Stowe, that the first coach—built by the Earl of Rutland—formed a new era. Horseback, however, maintained its precedence whenever speed was required. In the sixteenth century a letter was dispatched in this way by Lord Burleigh, and the envelope, yet extant, bears on it, with the direction, the receipts of the parties through whose hands it passed. It was necessarily the most expeditious mode, as fresh saddle-horses and guides were to be had at certain convenient distances. If, however, such were the difficulties of locomotion in that age, on which certain gentlemen look so lovingly and longingly, it must be added that the streets of London were worse; nor will the following picture of them be out of place:—

"The kites, crows, and other ravenous birds were

the only scavengers of the busy streets. The traffic was comparatively so slight that the mud which collected in the uneven roads proved no inconvenience to shopkeepers; a pack-horse might now and then pass by, a gay and chivalrous knight might call the attention of the honest burgher, but vehicles were rarely used, and the bugle of the mail never enlivened the thoroughfares of the city. Holborn, the great artery of Modern Babylon, through which pours in quick succession one loud, busy, rattling stream of life and commerce, was not paved till the commencement of the fifteenth century. Some of the minor streets were scarcely passable. Narrow lanes, with hedges broken only here and there by a straggling house, were the primitive Wood-streets, Gray's-Inn-lanes, and Aldgate-streets, of modern times; some would venture to traffic in them in the day, but few would risk such perilous thoroughfares at night. Some of the streets were so bad in the prosperous days of King Henry VIII., that they are described as 'very foul, and full of pits and sloughs; very perilous as well for all the king's subjects on horseback as on foot.' Along such dangerous paths the traveller at night had

to grope his way about town in total darkness, except he was near enough to be guided by the lanterns on the steeple of Bow Church, which served as the only landmark to the bewildered stranger."

It was not until the sixteenth century that the roads of England were made the subject of legislative enactment. They had hitherto been under no law, they had owned no jurisdiction. They were made at will, they were repaired at pleasure. They lay through barren moors of vast circumference, they overhung precipitous descents of the most alarming character. In the reign of Mary it was decided that the various parishes should maintain their own roads. Surveyors were chosen; and, by means of forced labour, the first step was taken in that fine system which has at once caused and increased the commerce of England. The peasant, by this act, was compelled to give six days' work in each year; where more was necessary, hired labour was payed for by a parochial rate; and to the present day, in some parts of the empire, the hind pays his tribute of work to the highway.

An improvement was effected on this plan in the reign of Charles II. It was then practically

felt—it had been acknowledged theoretically long before—that there was no uniformity of way; that one road ran to the right and another to the left, in defiance of reason; that one pathway kept in good repair was useless, because that which it joined was not repaired at all; and it was determined to introduce something like a systematic principle. An act was therefore passed authorising a small toll, to pay the expense; barriers were thrown across the roads at various distances; but the people rejected the plan, opposing it as they oppose all novelty: nor was it until long after the above period that the highways could be considered at all in proportion to the importance of the country.

Such were the roads of England at a period when she had advanced far before her neighbours in adorning her capital, in pleading, trading, and in studying. Such were her roads when "the father of English poetry depicted in rich and rare language the wide varieties of English life;" when John Wycliffe first taught the people to think; when the condition of the peasant was becoming ameliorated; when between the baron and the yeoman arose that great mercantile body of

which England has ever had cause to be proud, when the political institutions of the land were regarded by foes with envy, and by friends with admiration; when the prowess of Elizabeth woke the pride of her subjects; when Shakespeare gave to the world his deathless plays; when Sidney lived and died; when Raleigh carried the name of his country to new worlds; when Burleigh governed, and when Bacon taught.* The consequence was that the country village maintained its antique customs and prejudices, that, where it was far from the high road, news from the great city only reached it by accident

* It is scarcely possible to avoid reminding the reader that at this very period in another hemisphere, beneath a monarch regarded as barbaric, treated as an infidel, and doomed to die a violent death, roads were formed worthy those which the old Roman has bequeathed to us. Mr. Prescott says in his "History of Peru," speaking of its road, "It was conducted over pathless sierras buried in snow; galleries were cut for leagues through the living rock; rivers were crossed by means of bridges that swung suspended in the air; precipices were scaled by stairways hewn out of the native bed; ravines of hideous depth were filled up with solid masonry; in short, all the difficulties that beset a wild and mountainous region, and which might appal the most courageous engineer of modern times, were encountered and successfully overcome. The length of the road, of which scattered fragments only remain, is variously estimated from 1,500 to 2,000 miles, and stone pillars, in the manner of European mile-stones, were erected at stated intervals of somewhat more than a league all along the route..... The other great road of the Incas lay through the level country between the Andes and the ocean. It was constructed in a different manner, as demanded by the nature of the ground, which was for the most part low, and much of it sandy. The causeway was raised on a high embankment of earth, and defended on either side by a parapet or wall of clay;

and at uncertain intervals. The massacre of the Jews in London at the coronation of Richard I. was not known at Stamford, Norwich, and York for several months. The abdication of James was not heard of in the Orkneys until three months after his flight; and ordinary news was long ere it reached the distant city; and longer still ere it reached the rustic hamlet. London was a great myth to the villager. It was the place where kings reigned and ministers decreed justice; whence wars and rumours of wars emanated. Queens died and new dynasties succeeded without the fathers of the village knowing or caring for the change. Their luxuries were from their own vineyards and their own orchards; their necessities were the produce of their own farms. Their sons and daughters intermarried; children were born to them, inheriting their prejudices along with their acres; and had it not

and trees and odoriferous shrubs were placed along the margin, regaling the sense of the traveller with their perfume, and refreshing him by their shade, so grateful under the burning sky of the tropics. In the midst of sandy wastes, which occasionally intervened where the light and volatile soil was incapable of sustaining a road, huge piles were driven into the ground to indicate the route to the traveller."

Humboldt confirms the great American historian, and says, "The roads of the Incas were among the most useful and stupendous works ever executed by man."

been for the gradual improvement in our roads during the last century and a-half, the ignorance of the country would have remained unchanged, and the innocence of country life been still an article of faith. That which the turnpike-roads effected is a portion of our political economy; that which will result from the railroads can only be known from time.

In the seventeenth century, further but not very successful efforts were made to improve travelling, and the roads remained eminently bad. The charge of conveyance amounted in many instances to a prohibition. Heavy goods cost from London to Birmingham £7 a ton; from London to Exeter £12 was paid. Coal, even then, was rarely seen, save in the neighbourhood of the district which produced it. Pack-horses—strong, enduring animals, the breed of which is now extinct—were employed to carry the produce of the weaver's patient skill, the pottery of Staffordshire, and even the coals of Newcastle. Labouring along heavy roads, toiling beneath a burning sun, wending their way through bare, bleak moors, down steep descents, by dangerous rivers, on narrow tongues of land, between masses of mire and mud, so deep as to be dangerous if they entered

—a leading horse bearing bells to intimate the approach of the party he heralded—the group formed a most picturesque accompaniment to the wild, weird scenes it enlivened. Fortunate was it if they who heard the musical tinkle of the leader's bell could avail themselves of the notice. The solitary horseman, bearing perhaps intelligence which would make or mar a revolution, was compelled to yield, and, stepping out of his path at the hazard of not recovering it, to wait until the procession had passed. The private carriage—if such indeed should chance to approach—left the track at the risk of never returning to it; while more numerous parties either resisted the cavalcade, or moved like the solitary passenger out of the way, as their weakness or their strength might dictate. With such difficulties before them, few persons left their homes but those who were called by some most special reason. Our great historian remarks that "the inhabitants of London were for almost every practical purpose further from Reading than they are now from Edinburgh, and further from Edinburgh than they are now from Vienna." Coaches continued to stick fast, travellers to be benighted. Carriers went out of the beaten track on the melan-

choly moors; and a viceroy, with all the appliances and appurtenances of wealth, was five hours going fourteen miles. Contemporary letters are full of similar illustrations. Thoresby, the antiquary, nearly lost his way in a well-known road. The attractive Pepys, with his attractive wife, were almost obliged to pass the night on Salisbury-plain. Travellers went in fear of their necks; dukes were obliged to walk in muddy roads; and the carriages of reigning princes were only saved from falling by their subjects' support.

The serious difficulties which beset travelling produced stage coaches; and great was the innovation when, in 1669, sanctioned by the doctors of the University of Oxford, the flying coach undertook to perform the journey from that place to London between the rising and the setting of the sun. "This spirited undertaking," says Mr. Macaulay, "was solemnly considered and sanctioned by the heads of the University, and appears to have excited the same sort of interest which is excited in our own time by the opening of a new railway. The success of the experiment was complete. At six in the morning the carriage began to move from before the

ancient front of All-Soul's college, and at seven in the evening the adventurous gentlemen who had run the first risk were safely deposited at the inn in London." The dangers of winter, however, were too great to compete with, and this coach was abandoned during the dark months. In 1662 there were only six stages in all the country; and one, wise in his generation, John Crossdell, of the Charter-house, thought they were six too many. Nor was Mr. Crossdell's opinion unsanctioned by the general feeling; for in 1671, Sir Henry Herbert, a member of the House of Commons, said, "If a man were to propose to convey us regularly to Edinburgh in coaches in seven days, and bring us back in seven more, should we not vote him to Bedlam? Or if another were to assert he would sail to the East Indies in six months, should we not punish him for practising on our credulity?"

But the great increase of the monied interest, the confidence which was felt in the government when the faithless Stuarts had left the country they could not govern, the impulse given to commerce, and the general feeling of security, produced important results. The antiquarian traveller, who chooses to delay

his journey an hour at York, and go to the "Black Swan" hotel, may there behold the following evidence of increasing enterprise in the commencement of the century following that just treated:

York Four Days.

Stage-Coach

Begins on Friday, the 12th of April, 1706.

All that are desirous to pass from *London* to *York*, or from *York* to *London*, or any other place on that road; let them repair to the *Black Swan* in *Holbourn* in *London*, and to the *Black Swan*, in *Coney-street* in *York*.

At both which places they may be received in a *Stage-Coach* every *Monday*, *Wednesday*, and *Friday*, which performs the whole journey in four days (if God permits), and sets forth at five in the morning.

And returns from *York* to *Stamford* in two days, and from *Stamford*, by *Huntington*, to *London* in two days more. And the like stages on their return.

Allowing each passenger 14 lb. weight; and all above, 3*d.* a pound.

Performed by { Benjamin Kingman, Henry Harrison, Walter Baynes.

Also this gives notice, that a *Newcastle Stage-Coach* sets out from *York* every *Monday* and *Friday*, and from *Newcastle* every *Monday* and *Friday*.

This curious relic is rendered more significant by the accompaning picture from the pen of an essayist of the day, describing a journey about this period, and probably in some such vehicle, to Cambridge:—

"I resolved, since the season of the year proved dry and pleasant, to make a short journey to Cambridge. * * * By the time I got to the place of starting, the

country tub-driver began to be impatient, all the company but myself being already come, and had taken up their stations in the dirty, lumbering, wooden hovel, being more in shape like a tobacco hogshead than a coach, bellying out like the stern of a Dutch fly-boat, and was built more for burthen and the horses' ease than to commode travellers. The rest of the company being most of them pretty burly, had made a shift to leave me a nook in the back part of the coach, not much wider than a chair for a jointed baby." In this "tub," drawn by "half a dozen bony hacks," the essayist proceeded, stopping at Ware, twenty miles from London, to dine, and at Barley, thirty-seven miles off, to sup and sleep; from thence, through Saffron Walden, at an "ass's gallop" he reached Cambridge, "a place so abominably dirty that Old-street, in the middle of a winter's thaw, or Bartholomew fair after a shower of rain, could not have more occasion for a scavenger than the miry streets of this famous corporation, most of them so very narrow that should two wheelbarrows meet in their largest thoroughfare they are obliged to stop half an hour before they can clear themselves of one another." This was the mode of journeying by

coach to, and such was Cambridge, a century and a half ago.

In 1712, the following advertisement appeared in the *Newcastle Courant*:—

Edinbro', Berwick, Newcastle, Durham, and London stage-coach begins on Monday, the 13th of October, 1712. All that desire to pass from Edinbro' to London, or any place on that road, let them repair to Mr. John Baillie's, at the Coach and Horses, at the head of Canongate, Edinbro', every other Saturday; or to the Black Swan in Holborn, every other Monday; at both of which places they may be received in the stage-coach, which performs the whole journey in *thirteen* days, without any stoppages (if God permits), having eighty able horses to perform the whole journey: each passenger paying *four pounds ten shillings*, allowing each passenger 20 lb. of luggage; all above, 6*d.* per lb. The coach sets off at six o'clock in the morning.

These were the modes and methods which the commonalty adopted. The peer and the *parvenu* were kept at their relative distances; and the great master of modern fiction gives a graphic description of the mode in which the rich man travelled in the early part of the last century. It contrasts so strangely with the noble of the present day stepping into the first-class carriage with no more attention than is paid to a first-class passenger, mixing with the tradesman and the merchant, and joining with the architect or the attorney in familiar conversation, that the writer is tempted to show the traveller of a century and a half ago in all his greatness and grandeur:

"The privilege of nobility in those days," says Sir Walter Scott, "had something in it impressive on the imagination; the dresses, and liveries, and number of their attendants, their style of travelling, the imposing and almost warlike air of the armed men who surrounded them, placed them far above the laird who travelled with his brace of footmen; and as to rivalry from the mercantile part of the community, these would as soon have thought of imitating the state and equipage of the sovereign.....Two running footmen, dressed in white, with black jockey caps and long staffs in their hands, headed the train; and such was their agility that they found no difficulty in keeping the necessary advance which the etiquette of their station required before the carriage and horsemen. Onward they came at an easy swinging trot, arguing unwearied speed in their long-breathed calling. Behind these glowing meteors, who footed it as if the avenger of blood had been behind them, came a cloud of dust, raised by riders who preceded, attended, or followed the state carriage."

The country is indebted to the evils of war for some change in our roads. The unfortunate rising of 1715, but more especially that of 1745, rendered

highways necessary for the transport of troops; and the unhappy distich so well known—

> Had you seen but these roads before they were made,
> You would lift up your eyes and bless General Wade,

is a further indirect evidence against them; while a direct evidence of the necessity of improvement may be inferred from the fact that when Charles Edward was only one hundred miles from Edinburgh, the meagreness and uncertainty of news concerning him was so great, that had he been in a Russian province there could not have been more ignorance of his movements.

Pedlers and pack-horses continued to the middle of the last century to form an important feature in locomotion. The former had long been the chief if not the only mode of procuring intelligence possessed by country residents; the pedler was, therefore, an ever-welcome guest. He was a collector of news by choice and by profession. He took with him the broadside, which printed in the metropolis, was eagerly perused in the village. He carried correspondence from one portion of the country to another. He wrote letters for the peasantry. The seditious intelligence of plotters was frequently entrusted to

him. He purchased the spoil from the wrecker, and the first information of the wreck was often received from his public sale of the articles it contained. The "travelling merchant," as Scott makes Andrew Fairservice call his cousin the pedler, was looked and longed for by all. To the farmer he brought intelligence of the crops and the country. To the good wife he brought household necessities. To the daughter he brought the last London fashion. To the son he gave the only glimpse which he could hope to receive of the great metropolis. To the hind he told tales of terror, which have scarcely yet faded from the haunts and hearths of the peasantry. He related all the great atrocities that had excited the selfish circle of which Horace Walpole was the shrewd exponent. He detailed the executions which George Selwyn loved to witness. He repeated paragraphs from some patriotic speech which had startled London, or dilated on some piece of courtly scandal which had moved the mirth of the city. Nor was the pedler unfrequently the hero and the victim of stories similar to those which often thrilled the fireside of his auditors. Travelling rude and rugged paths, with articles often of value, and always attrac-

tive, journeying by roads where no one was near to aid—sometimes in the bed of rivers which summer had dried, and sometimes between lonely hills which winter had clad in snow—his remains were not seldom left to tell in a bloody and violent death a melancholy tale of man's rapacity.*

In 1763 turnpike-gates were first established in all parts of England, and were, for a series of years, the principal mode of supporting the expense occasioned by the repair of the thoroughfares. In vain the counties in the neighbourhood of London petitioned Parliament against the plan, alleging that they could not compete

* A reference to the *Autolycus* of Shakespeare will confirm the writer: "He hath ribands of all the colours i' the rainbow. He hath songs, for man, or woman, of all sizes." His ballad "to a very doleful tune, of a fish that appeared on the coast, forty thousand fathom above water;" his poetical description of his pack, show that from that early period to a very late one the pedler was a marked personage:

"Lawn, as white as driven snow;
Cyprus, black as e'er was crow;
Gloves, as sweet as damask roses;
Masks for faces, and for noses;
Bugle-bracelet, necklace-amber,
Perfume for a lady's chamber:
Golden quoifs, and stomachers,
For my lads to give their dears;
Pins, and poking-sticks of steel,
What maids lack from head to heel:
Come, buy of me; come buy, come buy;
Buy, lads, or else your lasses cry."

Thus the pedler of Shakespeare's time was the pedler of a century ago.

with the remote districts in the price of produce; in vain the people tore the toll-bars to the ground; in vain the Squire Westerns of the day denounced them: the House of Commons declined to attend to the popular outcry; and experience has since decided that the improvement of our thoroughfares has been beneficial to all.

In addition to the state of the roads, they continued to be unnecessarily circuitous. In their formation public considerations had given way to private interest. The landed proprietor possessed an unlimited power over the roads of the district in which he resided: and the plantation beneath which he had sheltered himself and his children, the ornamental enclosure rendered dear by household memories, the trees planted by Sir Ralph or Sir Rupert, were sacred in his eyes. All his influence was naturally used to form the line of road in that direction which would interfere the least with, while it benefited the most, his estate. Often, therefore, through a level part of the country, where the road might have been straight, it wound for miles out of its way; while as often it ascended steep hills where it might have been level, or passed

through a miry soil where it might have been on a firm foundation.

The system of forced labour, under all circumstances impolitic, even in those of despotic places, where the bow-string and the bastinado are in request, was found exceedingly inconvenient in a free country. The reaper threw down the remunerative sickle to handle the unremunerative spade; while the farmer saw his grain spoiled as the peasant worked slowly and sullenly at the work to which he was doomed. These disadvantages were obviated by a tax on land, which has effected a most beneficial change. Previous to this impost the roads of Scotland, even in the best cultivated districts, were in the worst possible state. They soon became the best in Europe.

But the plan by which turnpike-roads were managed was found exceedingly troublesome. The necessity of having a tollgate-house was also ruinously felt; and it was calculated that 40 per cent. of the receipts went in expenses. The consequence was that the business fell by degrees into the hands of capitalists, who purchased the tolls from the trustees, and undertaking their collection, saved both trouble and cost.

Highwaymen, another danger incidental to the infancy of locomotion, must not be passed over. Though nightfall saw the traveller duly housed, daylight was often no safeguard against the marauder. A crowded coach was a temptation to an Abershaw. Rash and daring, a bold and skilful horseman, it was no uncommon circumstance for the Claude Duval of the day to attack and rob, single-handed, a stage full of passengers. The arms of the riders were no alarm to him. The coachman stopped his cattle at his approach; the postilion was often in his pay. He created tremor in the minds of all as they came near his reputed haunts. The gentleman thanked heaven if he escaped a visit on Finchley-common; the lady ejaculated her delight as she passed the confines of Hounslow; the wild heath which graces Shooter's-hill was a terror to the traveller; and more fervent prayers were heard for safety on huge, desolate Salisbury-plain than were ever breathed in its fine cathedral. The highwayman was a portion of our roads then, as he is now a portion of our established literature. He is alluded to in our early essayists; he lives in Fielding and in Smollett; he is introduced into our elder dramas; he is the hero of an opera

yet popular with the people; he forms a part of the polished picture presented to us by Bulwer; and, it may be added, he is met with far more agreeably in fiction than on some bare, bleak heath, where the fame of King was great, where Turpin was a terror, or where Claude Duval won the hearts of ladies and rifled the pockets of gentlemen.

Notwithstanding the establishment of turnpikes on roads in 1763, it is certain that by 1770 no great improvement had been effected. Language fails to describe the internal roads in Lancashire in that year. One gentleman charged all travellers to avoid them as they would the devil, "for a thousand to one they break their necks or their limbs by overthrows or breaking down." Ruts four feet deep, floating with mud, were common, even in summer; being primitively mended by rolling in large, loose stones, which jolted the carriage or broke the springs. It is noticeable that in eighteen miles of "execrable memory," a traveller passed three carts broken down through these and similar causes; and this was in that Lancashire which encouraged Watt, which enriched Arkwright, which gave the earliest important railroad

to the world, and which is ever first and foremost in commercial enterprise. Nor were the roads near Newcastle better, but may be taken as an additional specimen of the dangers and difficulties of travelling at the very period when, and in the very neighbourhood from which, the first idea of locomotive steam-engines was taken. "A more dreadful road cannot be imagined; I was obliged to hire two men at one place to support my chaise from overturning. Let me persuade all travellers to avoid this terrible country, which must either dislocate their bones with broken pavements, or bury them in muddy sand."

When, however, business between town and country augmented, and a quick transit was rendered necessary, the power of money was brought into play, and relays of horses were supplied on the roads to carry the passengers. One chief cause of reform in post-office communication arose from the fact that the post was constantly being surpassed in speed by private adventurers: and because the inhabitants of a great country town would not understand why they could travel twice as rapidly as their letters were carried.

As time proceeded, increased capital produced increased competition. The opposition of rival coach proprietors, though often attended with deplorable accidents, produced excellent results; and by the period of the railroad era, it is fair to conclude the coaching system was perfect. The cattle were changed in a few brief seconds; the coachmen were bound by heavy penalties to be at their destination at an appointed hour; horses were bred especially for the duty, and they were urged in some cases with such inexorable rigour, that in their vain endeavours to perform a given distance within a given time, they fell with excitement, and died of a broken blood-vessel or a broken heart.

The roads also had reached an almost perfect condition; the invention of Macadam rendered it a system; and there were in 1825 few more pleasant occupations than passing over the ground at ten miles an hour, through a fine fertile country, over hills, by the side of woods, skirting forests, crossing brooks, enlivening the green lane, and gladdening the quiet village. Witnessing, as most have witnessed, the great speed and certainty of the mail-coach, it becomes a wonder how our friends of half a century

since could occupy so long a time in passing from one place to another; and a writer in the *Quarterly Review*, asking, "how can these hours be accounted for?" answers, "Why, if a commercial gentleman had a little business, there was plenty of time for that! If a real gentleman wanted to pay a morning visit on the road, there could be no objection to that! Half an hour was consumed in eating pork-pies in the season, and perhaps a fine specimen of church-architecture would occupy some antiquarian. Though two hours were allowed for dinner, 'Don't hurry yourselves, gentlemen; the coach is ready, but don't let me disturb you if you wish for another bottle;'" was a common saying, and thus the hours were consumed, pleasantly if not rapidly.

The preceding sketch of travelling in the good old time has brought the writer to the subject of which this volume treats. He trusts that it may not appear an unfit introduction to so analagous a topic as the rise and progress of railway locomotion; previous to which, however, its antecedent, the canal, will be briefly sketched.

CHAPTER II.

THE ORIGIN OF CANALS —FRANCIS MATHEW.—DUKE OF BRIDGEWATER'S CANAL. —THE DIFFICULTIES IT ENCOUNTERED.—ITS SUCCESS.—JAMES BRINDLEY.— JOHN GILBERT.—VALUE OF CANAL PROPERTY.—THE ORIGIN OF RAILWAYS. THE WOODEN TRAMROAD.—SIMPLIFICATION OF WORK.—DESCRIPTION OF ROGER NORTH.—WAY LEAVES.—MARQUIS OF WORCESTER.—THE RAILROADS OF NEWCASTLE.—INCREASED DEMAND FOR COAL.—FIRST IRON RAILS.— DESCRIPTION OF TRAMROADS IN 1765.—CLAIM OF MR. CURR FOR THE INVENTION OF IRON ROADS.—THE EARLIEST LOCOMOTIVE.—DR. ANDERSON'S RECOMMENDATION.—MR. EDGEWORTH'S PROPOSAL.—THE IMAGINARY DIFFICULTY, AND VARIOUS MODES OF OVERCOMING IT.—IMPROVEMENTS IN MACHINERY.—SUCCESS OF THE PRINCIPLE OF RAILROADS.—THE FIRST LOCOMOTIVE OF GEORGE STEPHENSON.—THE STOCKTON AND DARLINGTON RAILWAY.—ITS SOCIAL AND COMMERCIAL ADVANTAGES.—LIST OF THE EARLY RAILWAYS.

In 1656 one Francis Mathew, deeming probably that the repose enjoyed by England was favourable to internal improvement, memorialized Cromwell on the advantage of a water communication between London and Bristol. "It is hardly fair," says a writer in the *Quarterly Review*, "to look down from the height of modern achievement with contempt on a man who, at all events, did his best to call

public attention to a neglected subject. Had Mathew succeeded in fixing it upon the vigorous mind of the Protector, his feeble suggestion might have fructified, and Bridgewater and Brindley might have been anticipated by a century."

At the above period a canal was a very original idea in England; the utmost attempts of scientific men had been limited to the improvement, and not the creation, of internal navigation. So early as 1635 a Mr. Sandys formed a project to navigate the Avon, his object being the improvement of commerce. The nobility approved the scheme, and the landholders followed their example: civil war, however, broke out, and the project was abandoned. "After the Restoration," says Mr. M'Culloch, "and during the earlier part of last century, various Acts were at different times obtained for cheapening and improving river navigation. These attempts, however, were not very successful: the current of the rivers gradually changed the form of their channels; the dykes and other artificial constructions were apt to be destroyed by inundations; alluvial sand banks were formed below the weirs; in summer the channels were frequently too dry to allow of their being

navigated, while at other times the current was so strong as to render it quite impossible to ascend the river, which at all times, indeed, was a laborious and expensive undertaking."

Such remained the position of this branch of locomotion when the father of inland navigation, Francis, Duke of Bridgewater, obtained an act of Parliament to make a canal between Worsley and Manchester. It need not be said that his grace proposed to benefit himself as well as his neighbours, and that visions of a large return floated in his brain; although there is little doubt that when he had once entered with his wonted energy into the great task, the mere pecuniary results faded before the grandeur of the undertaking. The title which yet rests upon the memory of this gentleman, of "the father of inland navigation," has been disputed on the strength of an act obtained by Scroop, the first Duke of Bridgewater, in 1737, for rendering Worsley-brook navigable, and also because the Sankey navigation act was passed in 1755. The latter only is worthy of notice, and Mr. Hughes, in his life of Brindley, disposes of the question.

"In the year 1755, an act was obtained for making

the Sankey brook navigable from St. Helen's to the river Mersey, but the proprietors afterwards determined to abandon the stream and to make an entirely new canal, using the water of the stream merely to feed the canal. Accordingly the canal was dug as close along the side of the stream as practicable, and opened for navigation in 1760. In the meantime the Duke of Bridgewater applied in 1758 for power to construct a canal, not in the bed of any stream, not near or parallel with the course of any stream, but entirely across the dry land."

It appears then that the first English canals are indisputably due to the determination of the Duke of Bridgewater, and to the mental power of that James Brindley whose life was passed in overcoming the difficulties which beset their creation; who, when asked before a committee of the House of Commons what he considered the use of rivers? replied in all single-mindedness that "they were formed to feed canals;" and it has been said that the question as to the propriety and probability of the duke's undertaking that great work which bears his name, was discussed by "three hard-headed men round the humble hearth of the manor-house of Worsley,

or the still humbler village inn." Those men were James Brindley, John Gilbert, and the duke.

At the early age of seventeen, his grace took the grand tour, returned to London, and joined its gaieties. He became an amateur jockey, and the large, bulky man of after years was then so slight, that bets were proposed that he would be blown off his horse. Horace Walpole records a ball given by him, and to one of the Gunnings, celebrated for their beauty, the duke yielded his heart. His judgment proved stronger than his feelings, and when the breath of scandal fastened on the future wife of Duke Hamilton, the Duke of Bridgewater renounced his claim. To this, probably, is the Bridgewater-canal owing; for the husband of the most beautiful woman of the day would have had other duties than that of creating an inland navigation. That the duke consulted Mr. Brindley as to the propriety of forming a canal between Worsley and Manchester, argues a thoughtful mind; and that Mr. Brindley encouraged the idea, speaks strongly for the self-reliance of the man who, capable of comprehending all the difficulties which surrounded his project, felt also

capable of surmounting them. It was no ordinary work; and Brindley was no ordinary man. Besides being the first canal in English history, the obstacles which opposed it were legion. It was determined also to preserve the level of the water without the usual obstructions of locks; and to do this, it was necessary to carry it over rivers and valleys, to pass through subterraneous tunnels, and to surmount elevated aqueducts. Public opinion was by no means in favour of the undertaking. The multitude had no hesitation in declaring the duke insane, and Mr. Brindley a penniless theorist. The duke's aristocratic compeers thought how much better they could spend the money; and when the engineer absolutely proposed to carry his great work over the Irwell, by means of an aqueduct thirty-nine feet above the surface of the water, there is little doubt that his relatives considered a madhouse the best place for a man who thus wasted his money. That his grace was in earnest, was proved from the fact that he limited his personal expenses to £400 per annum, and that every penny which by any mode or method could be collected, was expended on his beloved project. Fortunate was

it for the duke, that associated with him as assistant was a practical and persevering man named John Gilbert, who, fond of mines and mechanical operations, brought to the aid of the duke an energy and firmness as resolute as his own. He was the duke's great aid and ally in procuring money. He went about the country borrowing cash on all or on any security; he was a familiar figure on the exchange of Liverpool, where the duke's bill for £500 could scarcely be cashed; he was a weekly visitor among the farmers in the neighbouring districts, borrowing such small sums as they could spare; he forestalled the rental of the duke's tenants; and he appealed to the prestige of the ducal name, in his earnest endeavours to support that which was popularly known as the duke's folly. At length the engineer brought his work to a close, and it is impossible to do sufficient justice to the resolute character of the Duke of Bridgewater or the genius of Mr. Brindley. Stupendous mounds of earth, which seemed to demand a Titanic power, were removed from the way. Supplies of water were procured, sufficient to exhaust mountain springs and mountain rivulets; aqueducts were built far above the surface

of the river, rivalling those which conveyed water to the eternal city from the mountain recesses.

The time of trial had passed and the hour of triumph was at hand; and it is indicative of the character of the engineer, that when the moment arrived for admitting the water into the aqueduct, his nerve was unequal to the crisis, and he left to the cool, resolute Gilbert the task of superintending the operation which would make or mar the fortunes of three great men. That operation was successful. The prejudices of the ignorant multitude were uprooted; the scientific few were delighted. They who had gone to scoff, remained to praise; and an engineer who had sneeringly said he had heard of castles in the air, "but never before was shown where they were to be erected," began to wonder as much at his own opposition as at the simple grandeur of the work he had derided.

"When the Duke of Bridgewater," says Dr. Aikin, "undertook this great design, the price of carriage on the river navigation was twelve shillings the ton from Manchester to Liverpool, while that of land carriage was forty shillings a ton. The duke's charge on the canal was limited by statute to six

shillings; and together with this vast superiority in cheapness, it had all the speed and regularity of land carriage. The articles conveyed by it were likewise much more numerous than those by the river navigation: besides manufactured goods and the raw material, coals from the duke's own pits were deposited in yards at various parts of the canal, for the supply of Cheshire; lime, manure, and building materials were carried from place to place, and the markets of Manchester obtained a supply of provisions from districts too remote for the ordinary land conveyance. A branch of useful and profitable carriage, hitherto scarcely known in England, was also undertaken, which was that of passengers' boats, on the model of the Dutch, but more agreeable and capacious; and, when set up at very reasonable rates carried numbers of persons daily to and from Manchester." Thus the markets of Manchester were supplied, country scenes and country sites were visited, the holiday of the artizan was enlivened by a trip to the rustic wood; and passengers were enabled to travel along that canal which they owed to the patient endurance and undeviating firmness of Francis, Duke of Bridgewater, and to the singular

ability of his unrivalled architect; to both of whom personal comfort and public praise were trivial in comparison with the achievement of a great idea.

The first canal was soon followed by others. The duke himself was not satisfied with one attempt, but made use of Mr. Brindley to carry out other extensive projects. Canals were proposed by capitalists, and that frequently in places where they were not required. They formed a novel mode of investment; and when, in 1790, the windows of inns were forced, and farmers met at midnight to procure shares which would ruin them, it need not be said that an absolute mania existed. At the present period about 2,400 miles of canal pass through the fields and fertile places of England, conveying goods, assisting commerce, and creating intercourse. Of the remarkable value of a few of these speculations, some notion may be obtained from the fact, that in 1846 the dividend on canal property was as follows:—

Grand Junction Canal	6 per cent.
Oxford	26 "
Coventry	25 "
Old Birmingham	16 "
Trent and Mersey	30 "

It has been seen that commerce and communication go hand in hand; that the industrial fruits of a people are useless without a mart, and that a mart is only to be attained through the medium of a road or canal.

It has been already shown also that when the wealth of the nation consisted in its beeves and its broadcloth; when the intercourse between countries was slow and uncertain; the commodities it possessed were valueless compared to the period when civilisation made a highway for its goods, and created a demand for its produce.

The precise origin of railroads is unknown; but that the earliest approximation to the modern railway was the wooden tramroad, there can be no doubt. And simple as the first change appears from the heavy road to the smooth tram, he was probably no ordinary man who, taking the laws of nature as his guide, and her operations as his rule, seeing that the rut of the common way rendered the work of the cattle easier, applied the principle to the reduction of labour, and took the initiative in the modern system of railroads; and when, acting on this inspiration, logs of wood, placed in parallel

lines, bore the mineral product of the mine to its place of deposit, great doubtless was the joy of him who had reduced his work and added to his wealth. The idea, though simple, was effective; as the horse which, previous to this rude tramroad, could only draw 17 cwt., was enabled after its formation, to draw 42 cwt. without extra fatigue. This great change occurred, according to Mr. Wood, between 1602 and 1649; and it is certain that by 1676 the principle had been generally applied where private property could be improved. Roger North, describing a visit which his brother Lord Guilford made at the close of one of the circuits of the latter to Newcastle, says, that among the curiosities of the place were "way-leaves." "When men," he continues, "have pieces of ground between the colliery and the river, they sell leave to lead coals over their ground, and so dear, that the owner of a rood of ground will expect £20 per annum for this leave. The manner of the carriage is by laying rails of timber from the colliery down to the river, exactly straight and parallel, and bulky carts are made with four rowlets fitting these rails, whereby the carriage is so easy, that

one horse will draw down four or five chaldron of coals, and is an immense benefit to the coal merchants." For a long period no improvement was made in these roads, which were found both useful and profitable. It was not, indeed, a period fertile in invention; the fierce intestine warfare which produced a Cromwell, which ended in the decapitation of one monarch and the exile of another, was not favourable to the development of those arts and sciences which our own age has advanced and a future time will wonder at. "They were not, it is true," says the historian of England, "quite unacquainted with that power which has produced an unprecedented revolution in human affairs. The Marquis of Worcester had recently observed the expansive power of moisture rarified by heat: after many experiments he had succeeded in constructing a rude steam-engine, which he called a fire-water-work, and which he pronounced to be an admirable and most forcible instrument of propulsion. But the marquis was suspected to be a madman, and known to be a Papist; his inventions, therefore, found no favourable reception. * * * There were no railways except a few made of timber, from the mouths of the Northumbrian coal

pits to the banks of the Tyne. There was very little internal communication by water. A few attempts had been made to deepen and embank the natural streams, but with slender success. Hardly a single navigable canal had been even projected. The English of that day were in the habit of talking with mingled admiration and despair of the immense trench by which Louis XIV. had made a junction between the Atlantic and the Mediterranean."

The revolution of 1688, which has developed in so remarkable a degree the resources of the nation, was also, indirectly, the promoter of the railroad. It gave an impulse to commerce, and a security to property. A necessity for communication followed, and slowly but surely was that necessity supplied. The demand for the produce of the coal mine rendered quick transit important, and although the expense was great it is probable that by 1750 there was scarcely an important mine which had not its accompanying railroad: in some cases as much as £500 a year were paid for the way leave which Roger North described, but this was of little importance, as since the date of his visit the quantity of coal transported from the mine had nearly doubled.

From 270,000 chaldrons it had increased to 500,000, and the competition consequent on the increased demand required every facility which imagination could devise and which capital could supply. It appears tolerably certain that up to 1738 there was no other improvement in the tramroad than in the form or the quality of the wood. The iron way, as a thing by which man or the produce of his skill could travel was not even thought of. In that year, however, the change from wood to iron seems to be indicated by the following extract from the transactions of the Highland Society:—"In 1738 cast iron rails were first substituted for wooden ones, but owing to the old waggons continuing to be employed, which were of too much weight for the cast iron, they did not completely succeed on the first attempt. However, about 1768 a simple contrivance was attempted, which was to make a number of smaller waggons and link them together, and, by thus diffusing the weight of one large waggon into many, the principal cause of the failure in the first instance was removed, because the weight was more divided upon the iron."

It does not appear that this invention was much

more than recorded. The usual difficulties were to be surmounted; coal owners waited probably until their wooden roads were worn out, or until others more adventurous had ruined themselves in the attempt. At any rate the following description, which evidently proves that wood was still in common use, was given of the artificial road in 1765. "When the road has been traced at six feet in breadth, and where the declivities are fixed, an excavation is made of the breadth of the said road, more or less deep according as the levelling of the road requires. There are afterwards arranged along the whole breadth of this excavation, pieces of oak wood of the thickness of four, five, six, and even eight inches square: these are placed across and at the distance of two or three feet from each other; these pieces need only be squared at their extremities, and upon these are fixed other pieces of wood well squared and sawed, of about six or seven inches breadth by five in depth, with pegs of wood; these pieces are placed on each side of the road along its whole length; they are commonly placed at four feet distance from each other, which forms the interior breadth of the road."

The usual lassitude accompanied this invention; men were contented with that which their sires had used, and the iron rail was employed by very few, notwithstanding its superior strength and imperviousness to the effects of the weather.

In 1765, then, the common railroad was of wood, but it appears clear that in 1767 the idea was entertained of practically applying iron to a similar purpose. "I, some years ago," said Mr. Robert Stephenson, "visited the great iron works at Colebrook Dale, in Shropshire, where cast iron was indisputably first applied to the construction of bridges; and, according to the information which I have been able to obtain, it was here also that railways of that material were first constructed. It appears from their books that between five and six tons of rails were cast on the 13th November, 1767, as an experiment, on the suggestion of Mr. Reynolds, one of the partners."

A claim to this novelty has been entered by Mr. Curr, who, in his "Coal Viewer and Engine Builder," says that the making and use of iron railroads were among his first inventions, and were introduced into the working of the Sheffield colliery about the year 1776.

By this period the discovery of steam had been variously applied, and reflective men were employed on that power which had been used in the mines of Cornwall, which had been pioneered by Dr. Black's beautiful discovery of the power of latent heat, and which Watt rendered applicable by those experiments that attained an unintermitted supply of steam and a continuous rotary motion. This fine invention caused Watt's thoughtful mind to recur at once to the practicability of forming an engine which should move by virtue of his novel discovery, and, in 1759, to this was his power devoted and his energy given. How far he succeeded does not appear; but it is certain that in 1769 he expressly mentioned the possibility of applying the steam-engine to domestic improvement; and that by 1787 the discovery had so far proceeded that Mr. Symington, who has such claims to the invention of the steam-boat, exhibited the model of a steam-carriage in Edinburgh, at the house of Mr. Gilbert Meason; and it must be added that in 1802 Mr. Trevithick* took out a

* A singular fate appeared to follow this machinist; "Trevithick, after trying one thing after another, and finding friend after friend to help him, two years after Stephenson's beginning at Killingworth, left England for the West Indies, whence he did not come back—and then penniless—until Stephenson had

patent for an invention, and brought into use in 1804 a machine of this nature on the railroad of Merthyr Tydvil, in South Wales; and the first locomotive in England, however rude or imperfect, was then and there employed for a short time.

It will presently be seen that thoughtful men were bearing in mind the power and practicability of the iron way for public use. In 1800, Dr. James Anderson recommended a general adoption of railroads, to be carried along the side of the existing turnpike-roads, specifying the way from London to Bath as the place where preliminary trials might be made. In 1802 again, Mr. Edgeworth published a similar proposal, suggesting that, besides heavy waggons

laid down the Stockton and Darlington Railway. Trevithick was taken up by Mr. Blackett, a bold, daring man, and sent a locomotive to Wylam, which, like most things in which he had a hand, was so wretchedly made that it was put to other uses. * * * Trevithick began better than Stephenson; he had friends in Cornwall and in London, and he ought not to have left Stephenson to work out the locomotive engine and the railway. Trevithick was always unhappy and always unlucky; always beginning something new, and never ending what he had in hand. The world ever went wrong with him, as he said; but in truth, he always went wrong with the world. The world had done enough for him, had he chosen to make a right use of any one thing. He found a partner for his high-pressure engine; he built a locomotive; he had orders for others; he set his ballast engine to work, and he drove his tunnel under the Thames for a thousand feet; but no one thing did well—all were afraid, and at length no one would have anything to do with him.—*Civil Engineer and Architect's Journal.* The locomotive of Trevithick was not used by Mr. Blackett on the tramway, being employed in some other duty.

at a slow pace, "stage-coaches might be made to go at six miles an hour, and post-chaises and gentlemen's travelling carriages at eight—both with one horse; and that small stationary steam-engines, placed from distance to distance, might be made by means of circulating chains to draw the carriages with a great diminution of horse labour and expense."

The first locomotive therefore was first in use in 1804, on a Welsh railway, drawing as many carriages as would contain ten tons of bar iron, at the rate of five miles an hour. The principle was perfect, the triumph was complete; a locomotive was in absolute work in the empire; and yet for years was the fallacy established in men's minds as fixedly as an article of faith, that it could not draw heavy loads; that the adhesion of the smooth wheels of the carriage to the smooth rails of the iron must be so slight, that though the wheels would move round, the carriage would not move with them. There was no doubt of this in the minds of scientific persons. It had been said by the pundit, it was believed by the scholar. Men published treatises, formed plans, made new discoveries, argued,

wrote, pleaded, and finally took out patents to overcome a difficulty which had no existence save in their own minds. Mr. Trevithick endeavoured to provide for it by certain projections in his wheels; Mr. Blenkinsop was granted a patent. One gentleman tried to form machinery which should imitate the action of the hind legs of a horse; while another was nearly successful in producing both the fore and hind legs, when in 1811 the important difficulty was partially overcome; and Mr. Blenkinsop, of Middleton Colliery, conveyed coals by the aid of engines with toothed wheels worked into a tooth-rack. This plan was very objectionable; but as it surmounted the fancied evil, great were the rejoicings. In only two years after, the evil itself was discovered to be a figment of the brain, and the efforts to overcome it a waste of time.

To Mr. Blackett, of Wylam railway, the credit appears due of destroying the theory. Being in possession of one of Trevithick's engines, he acted like a sensible man, formed another of greater power, similar to it, and then tested its capacity. To his delight he found that nature was not at fault, but that,

by virtue of one of her beautiful and unerring laws, the carriage actually moved rapidly along the road, however great the weight.

The railway on which these trials were made was by no means perfect; but the knowledge once given to the world was preserved. Experiments were made on other lines; the nature of the machinery was more perfectly comprehended; its operations were better understood; constant experience suggested successive experiments; and on the Killingworth railway, on 25th July, 1814, with an engine constructed under the superintendence of George Stephenson, was the triumphant success of the principle proved, by a carriage moving on a slight ascent, drawing after it eight loaded carriages, weighing twenty tons. Although this was a great advance, it was a somewhat cumbrous machine; the principal improvement being the introduction of two cylinders instead of one, which, acting at different portions of the wheels, produced a more regular motion, and abolished a fly-wheel hitherto used.

This was the first locomotive made by George Stephenson; and although it had been proved to demonstration that the wheels would go round,

however smooth the rails, Lord Ravensworth was called a fool for advancing the money, and Mr. Stephenson laughed at as a coxcomb, for attempting that which others in their superior wisdom declared impossible. "The first locomotive which I made," said that gentleman with honest pride, thirty-one years after the above date, "was at Killingworth colliery, and with Lord Ravensworth's money. Yes! Lord Ravensworth and company were the first parties that would entrust me with money to make a locomotive engine. That engine was made thirty-two years ago, and we called it 'My Lord.' I said to my friends that there was no limit to the speed of such an engine, provided the works could be made to stand."

From this period until that of the Stockton and Darlington railway, there is not much worthy of note. But the forerunner of the Liverpool and Manchester line, the first railway opened for public traffic, the first iron road on which the locomotive was used as the moving power for the carriage of passengers, occupies a position by virtue of these circumstances which it would otherwise want. Its engineer was Mr. Stephenson, its

originator was Mr. Edward Pease, another claimant, according to *Fraser's Magazine*, to the foundation of the new system.*

The great importance of the Liverpool and Manchester line has cast a shadow on that of the Stockton and Darlington; the former is ever looked to as the great starting point of the modern rail, and practically this is true. In it the public was appealed to, and responded; it was a public trial, a public announcement to the people that a new power was to be exerted for their benefit. It was made with public money; it was opposed and supported by public men; it was to all intents and purposes the first public line. When the latter was projected the proposal was limited to the conveyance of coal and other mineral products: its

* "We hope the time may never come," says a writer in the above periodical, "when the millions at home and abroad who enjoy the advantages of railways, shall have forgotten that they owe them all to Mr. Edward Pease, of Darlington. It would be idle to relate the endless opposition he received, the hostility of antagonists, the cold support of friends, the vexatious obstacles, the absurd objections, the doubt of some, the prejudice of others, the ignorance of all. These matters are now being forgotten. Confident in his judgment, ready in resource, undismayed by difficulty, with indomitable energy and perseverance, he gradually surmounted everything. It remains a striking instance of foresight that, without any experience, and 'with all the world before him where to choose,' he selected what, to the ordinary observer, is an unpromising district, and there made the first and most successful railway."

cost and capital did not exceed £250,000, although its extent was forty miles. But looked at in a higher point of view, it assumes a different appearance; it was the first line which tested the great continued power of the locomotive; it was the first railway which witnessed the public *débût* of the great mind which projected it; it was the first railway which really showed how much between two towns, the personal intercourse of which was trifling, facile and cheap communication would increase that intercourse. Its act of incorporation was obtained in 1821, it was opened in 1825: its promoters had only anticipated the carriage of 10,000 tons per annum, they had not thought of passengers, and the locomotive appeared incapable of acquiring the regularity required by such traffic. They began their work, therefore, with animal power. Prior to the formation of this railroad, there had been a coach traffic of fourteen or fifteen persons weekly: the rail increased it to five or six hundred. Each carriage was drawn by one horse, bearing, in ordinary cases, six passengers inside, and from fifteen to twenty outside; "In fact," says one writer, "they do not seem to be at all particular, for in cases of urgency they are seen

crowding the coach on the top, sides, or in any other part where they can get a footing; and they are frequently so numerous, that when they descend from the coach and begin to separate, it looks like the dismissal of a small congregation." The general speed with one horse was ten miles an hour. Another advantage conferred on the neighbourhood was in the unjust fact that the Stockton and Darlington railway were assessed in the amount of their net income, and paid in some parishes half the entire rates. In addition to the social advantages which accrued from increased communication—and who shall doubt the fireside union, the social pleasure, and the domestic happiness it conferred?—was the development of commerce, and the increased importance of the various places through which it passed. A new trade in lime arose; the carriage in lead was enormously reduced in cost; the price of coal fell from 18*s.* to 8*s.* 6*d.*; the landholders received large sums for gravel, timber, and stone, taken from their estates. An obscure fishing village was changed into a considerable seaport town. The Stockton and Darlington railway turned the shopkeeper into a merchant; erected an exchange; gave

bread to hundreds; and conferred happiness on thousands.*

Before proceeding with the further progress of railways, the writer deems it expedient briefly to recapitulate those which up to the present period—that saw alike the opening of the Stockton, and the proposition for the Liverpool and Manchester—had been formed. Before this period, it will be seen, the rail had taken a purely personal and local character. It had performed no great public benefit, it had developed no great public good, and it had attracted no great public notice.

The following is a list of railways, from 1801 to 1825:—

1801. The Surrey iron railway, from Wandsworth to Croydon, with a branch to Carshalton; its length was about nine miles, and the cost of its construction £60,000. The object proposed was the facilitation of conveying agricultural produce to London, and the return of manure to the country.

* Various statements have been made concerning the speed anticipated by Mr. George Stephenson for the locomotive; but there is no doubt his notions were very moderate, as at the opening of this line, he positively stated to Mr. Thorneycroft that *his utmost expectations were limited to twelve or fourteen miles an hour.*

1802. The Caermarthenshire railway was constructed for conveying limestone, coal, &c., to the basin at Llanelly, where it terminates. It is sixteen miles long, extending from a place called the Flats to the parish of Llanfihangel, Aberbythick. Its expense was £35,000.

1802. The Sirhowey tramroad was undertaken by the Monmouthshire canal company, in conjunction with the proprietors of the Tredegar iron works, and extends from the canal of the former company to the Sirhowey furnace. Its length was eleven miles, and its cost £45,000.

1803. The Croydon, Merstham, and Godstone railway, is a continuation of the Surrey iron railway, and commences at Croydon, whence it runs by the Brighton road to Merstham and Ryegate: a branch connects it with Godstone Green. Its length is about fifteen miles and three-quarters, and its cost £90,000. Its object was the conveyance of coal to and from London.

1804. The Oystermouth railway commences at Swansea at the end of the canal, and runs to Oystermouth, a distance of about six miles. Its cost was about £12,000.

1808. The Kilmarnock railway connects Kilmarnock and Troon, a distance of about ten miles; and cost about £40,000. Its object was the conveyance of coal, limestone, and other produce, to and from the great works in its neighbourhood.

1809. The Bullo Hill, or Forest of Dean railway, was formed to convey coals, timber, iron ore, and other minerals found in the forest of Dean, for shipment on the river Severn, to the banks of which it proceeds near Newnham: there are three branches from the line to the different coal mines in the forest. Its length is seven miles and a half, and the capital of the company £125,000.

1809. The Severn and Wye railway connects those two rivers. It commences at Ledbrook on the Wye, and terminates at the lower Verge, near Newern, in Gloucestershire. It is connected with the Severn at Nass-point by a canal one mile long. Its length, including branches, is about twenty-six miles, and the capital of the company £110,000. Its object and use is much the same as that of the preceding railway.

1810. The Monmouth railway runs from Howler

Slade to Monmouth. The company's subscribed capital was £22,000.

1811. The Berwick and Kelso railway company was incorporated this year, but did not avail itself of its power.

1811. The Hay railway commences at the wharf of the Brecknock and Abergavenny canal, near Brecon, and ends at Parton Cross, in Herefordshire, after a course of twenty-four miles, passing through a mountainous district. Capital £50,000.

1811. The Llanfihangel railway commences near the same place, and ends at Llanfihangel Crucorney, in Monmouthshire. Its length is about six miles and a-half, and the capital subscribed was £20,000.

1812. The Grosmont railway commences at the termination of the last railway, and runs to Llanguabridge, between Abergavenny and Hereford, about seven miles. The money raised to construct it was £13,000.

1812. The Penrhynmaur railway commences at the Penrhynmaur coal works, and is carried to Red-wharf, in Llanbedbroch, in the county of Anglesea, with a branch for a short distance northwards, on Red-wharf bay. It is something above

seven miles long, and consists of a series of inclined planes. The capital was £10,000, paid by the Earl of Uxbridge and Mr. Holland Griffith.

1814. The Mamhilad railway runs from the bank of the Abergavenny canal to Usk-bridge, in Monmouth, rather more than five miles. Its cost was £6,000.

1815. The Gloucester and Cheltenham railway commences at the basin of the Gloucester and Berkeley canal, in the city of Gloucester, and ends at Cheltenham about nine miles.

1817. The Mansfield and Pinxton railway runs from Mansfield town to Pinxton basin, near Alfreton, in Derbyshire, where it communicates with the Cromford canal. It has a branch of about a mile and a-half in length. The whole was constructed at a cost of £32,800, and it is used chiefly for the conveyance of coal and lime.

1818. The Kington railway is a continuation of the Hay railway, running from Parton-cross to Kington, in Herefordshire, and thence to the lime works, near Burlinjob, in Radnorshire; about fourteen miles. Its cost was £23,000.

1819. The Plymouth and Dartmoor railway runs from Sutton Pool, a short distance from Plymouth,

to Bachelor's-hall, in the parish of Lydford. Its length is about thirty miles, and it cost £35,000.

1821. The Stratford and Moreton railway runs from Stratford-on-Avon to Moreton-in-Marsh, in Gloucestershire, with a branch to Shipston-upon-Stour, in Worcestershire. Its length is about eighteen miles and a-half, and was executed at an expense of £50,000.

1821. The Stockton and Darlington railway runs from the left bank of the Tees at Stockton to Witton-park colliery, about two miles and a-half from Bishop Auckland, being about twenty-five miles; which with its five branches of fifteen miles and a-quarter, makes the whole length of this line something above forty miles. Its cost was about £250,000

1824. The Redruth and Chasewater railway runs from Redruth to Point-quay, in the parish of Feock, in Cornwall. The length of the line, including branches, is about fourteen miles. It cost £22,500.

1824. The Monkland and Kirkintilloch railway runs from the latter place in Dumbartonshire, for about ten miles to Palace Craig. The cost was £25,000.

1825. The Rumney Railway runs from Abertyswg, in Monmouthshire, to the Sirhowey railway, about two miles and a-half from Newport. The expense was £47,100.

1825. The West Lothian railway runs from Ryhall, on the Edinburgh and Union Glasgow canal, in the parish of Upshall to Shott, about twenty-three miles. It was constructed at an expense of £40,700.

1825. The Cromford and High Peak railway runs from Cromford canal to the Peak Forest canal; by a series of elevations it rises to 990 feet above the starting place. Its length is thirty-four miles, and it was formed at an expense of £164,000.

1825. The Nanttle railway runs from slate-quarries near Nanttle-pool, in the county of Caernarvon, to Caernarvon itself. The capital of the company is £20,000.

1825. The Portland railway runs from the priory lands in Portland island to the Castle. The cost was £5,000

1825. The Duffryn, Llynvi, and Port Cawl railway is in Glamorganshire. The cost of its sixteen miles and three-quarters was £60,000. Its object being to open a communication between several large iron and

coal mines, and quarries of limestone and freestone, and the Bristol channel.

Such, up to 1825, were the railways of this greatl and, nor is a consideration of the list uninstructive. It has been seen that from time to time the system had been improved; that enterprising men had joined their capital together for private advantage; that wherever they foresaw a prospect of gain, so surely was the money of the commercial man, and the mind of the inventive one, employed to produce the desired result. It has been seen that the power of steam was known and applied in the eighteenth century; that the facilities of the tramroad had been patent to the world for two hundred years; that the iron way had been, probably, tried nearly a century ago; that wherever a private local line had been established, it had diminished labour, increased profits, and lowered prices. Studious men had pointed out its public advantages, and private individuals had applied these suggestions to their own benefit. The locomotive had been in use the fifth part of a century, its imaginary difficulties had been overcome, and its real uses had been tested. There

was scarcely a county where some form of the railway was not used. The cultivated plains of Surrey had tried, if they had not profited by, its power. The produce of that forest once reckoned the chief support of the British navy, was carried by it. The wilds of the Principality were acquainted with its uses; the cautious Scottish merchant had essayed it; it had assisted the production of coal; it was known as a tried and true power.

But with all this knowledge there was no positive benefit to the great mass of Englishmen. They still travelled by coaches, and grumbled at the stoppages; they still ate their hurried dinners at exorbitant charges; they still complained of the involuntary taxation which followed them; ignorant that at that moment the first faint dawn of one of the greatest powers the world ever knew—a power only to be classed with the invention of printing—was steadily increasing, and would ere long burst forth into perfect day. Practical men were at work, and earnest men were thinking, and inventive men were suggesting plausibly and powerfully its future operations: they spoke to and worked for the many; they were scarcely listened to even by the few.

CHAPTER III.

THE EARLIEST IDEA OF RAILROADS.—THEIR PRESUMED COST.—DR. ANDERSON'S ESTIMATE.—THOMAS GRAY.—IMPORTANCE OF LIVERPOOL AND MANCHESTER.—IMPROVED COMMERCE.—THE MANCHESTER CAPITALIST.—HIS SOCIAL AND COMMERCIAL IMPORTANCE.—OPPOSITION OF THE CANAL PROPRIETOR.—DIFFICULTIES OF TRANSIT.—DUKE OF BRIDGEWATER'S OPINION OF TRAMROADS.—ENDEAVOURS OF THOMAS GRAY.—FIRST SURVEY OF WILLIAM JAMES.—RIVAL CLAIMS.

On February 11th, 1800, Mr. Thomas, of Denton, read before the Newcastle Literary Society, a paper on "the propriety of introducing roads on the principle of the coal-waggon ways, for the general carriage of goods," and an organised system of railroads was suggested by Dr. Anderson, who, in his "Recreations in Agriculture," in the following year distinctly proposed that where canals could not be established, tramroads should be laid down and worked with horse-power. The question was so far mooted that a committee from the Society of Arts inquired into the subject, saw a moderate

sized horse, with a descent of one in a hundred, carry, besides the waggon, forty-three tons down, and seven tons up the incline chosen for the attempt. It was also stated that railroads might be established at a moderate expense in many difficult countries; that they would not cost near so much as canals; that they might be introduced into districts where canals could not be formed, and that wherever surveys had been made for the latter it would be wise to examine the propriety of laying down rails instead of cutting canals.

The enthusiasm of Dr. Anderson was the enthusiasm of all who devote themselves to the development of a new idea. "Diminish carriage expense but one farthing," he said with the utmost confidence, "and you widen the circle; you form, as it were, a new creation, not only of stones and earth, and trees and plants, but of men also, and, what is more, of industry, happiness, and joy." Farmers, said this gentleman, would make bye-roads of the same sort, to lead to the main road. A ton weight might then be pushed before a man to market for many miles, like a wheelbarrow.

In order to discover the practicability of introducing

iron railways into general use, Dr. Anderson entered into some elaborate calculations respecting the expense. In the most eligible situation, where materials are good and labour abundant, the lowest expense of a single railway was calculated at £1,000 a mile; but as the inconvenience of single railways was even then foreseen, double railways, he considered, ought to be preferred. Those for public purposes should be very substantially made. The metal used should be of the strongest sort, of substance enough to carry the proposed weight and bear any blow to which they might be liable. Made in this way, in favourable situations in the country, a double railway was calculated to cost about £2,000 a mile; but near London, where everything was dear, he was willing to allow £3,000. Such a road would bring a charge upon the turnpike of £150 a year, say £50 more for annual repairs, in all £200 per annum; and as the road from Hyde-park to Hounslow cost £1,000 per mile every year, a great saving was at once shown in the rail.

Considered with regard to consumption, it would reduce the number of heavy road horses by seven-eighths, it would augment the number of cattle, in-

crease consumable provisions, and lower the price of the necessaries of life. It would decrease the cost of carriage, it would give encouragement to agriculture, it would produce a general prosperity, it would augment the consumption of taxable commodities, it would increase the public revenue, and relieve taxation. He reprobated all sort of gambling speculations by monied men, and advised as highly necessary, to prevent them from even becoming private property, that they should be made public to all who might choose to employ them under certain regulations. They should be put, he thought, on the same footing as public roads, under a distinct set of commissioners, vested with authority to erect turnpikes, to levy tolls, mortgage the produce, and to raise money for the purchase of land and making the roads. In the Act it should be expressly stipulated that the produce of these tolls should be applied solely to keeping the road in repair, paying the interest of sums borrowed, and repaying the principal as soon as possible. When the money was repaid, the tolls were to be lowered until they raised only sufficient to keep the roads in repair. Distance would be diminished; lands originally far

beyond the influence of the town as a market, would be brought, practically, close to its gates. The value of articles would be augmented four-fold to the producer, and diminished to the public. Fossil manures, formerly confined to a narrow spot, would be attainable by all. Coals, hitherto of no value in many districts, on account of the expense of carriage, would become valuable to the owner and create employment for the labourer. Around every market he supposed a number of concentric circles drawn, within each of which certain articles would be made marketable which were not so before, and thus become the source of wealth and prosperity to many. "It is scarcely possible," he says, "to contemplate an institution from which would result a greater quantity of harmony, peace, and comfort to persons living in the country, than would naturally result from the introduction of railroads."

Such were the ideas which, twenty-five years before the first railroad era, were read with carelessness and treated with contempt. It is the habit of the world to believe in the sudden creation of that which is forced on their attention. What is new to the million, the million believe must be new to

others. The name first associated with any success receives the credit, and the early rise of a grand discovery is too often lost to the annalist in its immediate greatness. The notions propounded by Dr. Anderson were sagacious and suggestive, but they took no hold of the public, partly from the ordinary indifference of the multitude, partly because the capital of the country was exhausted in loans, and partly because the time had not arrived for the thorough and earnest consideration of the railway system. Time passed, and it was long ere the idea thrown out by the Marquis of Worcester, developed by Watt, suggested by Anderson, and acted on in the Principality, was considered applicable to the wants and wishes of the country. It was, indeed, evident so early as 1820, that an increased speed between Liverpool and Manchester was necessary, as the canals which the Duke of Bridgewater had originated were the chief, indeed almost the only, resource of the manufacturer in sending the produce of his skill and of his capital to the four quarters of the globe.

The idea, however, which had thus been wisely and scientifically mooted by Dr. Anderson, found

devoted followers in the persons of Thomas Gray and Walter James.

"It is now about twenty-eight years," says an anonymous writer, "since a thoughtful man"—this man was Thomas Gray—"travelling in the north of England on commercial business, stood looking at a small train of coal-waggons, impelled by steam along a tramroad, which connected the mouth of one of the collieries of that district with the wharf at which the coals were shipped. 'Why,' asked Gray, 'are not these tramroads laid down all over England, so as to supersede our common roads, and steam-engines employed to convey goods and passengers along them, to supersede horse-power?' 'Propose that to the nation,' was the reply, 'and see what you will get by it! Why, sir, you will be worried to death for your pains.'" The words were prophetic; but Gray did not take the engineer's warning. His imaginative brain saw tramroads, locomotives, and steam engines triumphant; it beheld horse-power nearly superseded. He at length broached the scheme openly, first to public men by letters and circulars, and afterwards to the public itself.

None would listen to him; and the engineer's words seemed to have been spoken in the spirit of prophecy. Yet Gray was not unwise nor unfortunate in the period he had chosen. Manchester and Liverpool, the places fixed on for his scene of action, had increased in position and power beyond any parallel. Men already looked to the latter as rivalling London. The goods of the former surpassed the graceful productions which at one time could only be procured by the aid of foreign skill, while they were produced at scarcely a tithe of the cost. The connexion between the two places was close and intimate. There had been a constantly increasing communication; they were bound together by the ties of mutual advantage. Liverpool found a purchaser in Manchester for the raw material which was imported so largely into its warehouses. Manchester depended upon Liverpool for the supplies which kept its mills in work, and its operatives contented. The improvements in machinery had, of course, contributed to this. In 1769, Arkwright originated the waterframe; in 1770 the spinning-jenny of James Hargreaves was first heard of; in 1779 Crompton's mule-jenny was invented; and in 1785 Arkwright took out

a patent for improved carding, drawing, and roving machines. All these things necessarily increased the importance and the trade of Manchester.

The cotton sent from Liverpool to this place had increased fifty millions of pounds in nine years. The docks of Liverpool had seen their shipping augmented by 1,091 vessels in the same period. The progress of the timber trade had been active in proportion. From 1821 to 1824 the exports from Liverpool had increased seven millions and a-half. The dock duties had increased eight-fold; the tonnage had increased from seventy-one thousand to more than a million tons. The capital formerly employed in loans was now employed in commerce and manufacture, and business was flourishing. In Manchester a similar progress was visible. In 1790 a solitary steam-engine was exhibited to the curious spectator; in 1824 the smoke from two hundred darkened the air: in 1814 the loom gave its graceful produce to manual labour only; ten years later, 30,000 machines were worked by that power which Watt discovered, and which, first introduced into Lancashire by the elder Peel, proved the foundation of a fortune and a fame alike colossal.

From 1760 the trade in cotton had doubled every twenty years. In 1781 and 1785, Arkwright's patents were annulled, and a gigantic stride was the consequence. The population of Manchester and Liverpool had increased since the discovery of steam and the improvements in machinery to an unprecedented extent. Liverpool numbered, in 1824, 108,000 inhabitants more than in 1788. Manchester had increased from 1752 to 1824 by 139,000 souls. The capital of the manufacturer had more than proportionately increased. The mills of Manchester contained a working population equal to many continental cities. The capitalists of Manchester founded families, built churches, sent law-givers to the senate, mingled their blood with that of the aristocracy, and bequeathed princely fortunes to their sons. They outbid the patrician in the purchase of estates, and often employed more plebeians in one factory than the equestrian order could boast in its entirety. The painter found in them his most munificent patrons. The produce of the sculptor's skill graced their homes, and proved their taste. They were capable of appreciating, and were willing to sup-

port, the highest aspirations of science. They were intelligent representatives of an interest which had spread with the growth of machinery throughout England. At first a clique, gathered in particular localities for a particular purpose, despised by the great landed aristocracy as the founders of their own fortunes, they expanded to a class alike antagonistic and dangerous to that power which once refused to recognise them. The cotton lord of Manchester was then as much a feature in the history of commerce as he is now a feature in the history of the senate. There were more opulent fortunes in the dark streets of that unrepresented town than in the fairest continental cities. There were men, too, with minds as enlarged as their fortunes, capable of grasping any subject, of advancing any capital, of embracing any practical plan.

Although the wealth, the wisdom, and the importance of Manchester and Liverpool had thus increased, there was no increase in the carriage power between the two places. The canal companies—the Irwell and Mersey navigation, the duke's canal, and the Leeds and Liverpool—enjoyed a

virtual monopoly; and, with that singular want of foresight which so often accompanies unrivalled success, they had abused their power and controlled their customers.* The agents of these companies were despotic in their treatment of the great houses which supported them; they formed agreements to charge the same rates, and adopt the same plans. The charges, though high, were submitted to, but the time lost was unbearable to the active spirits thus controlled. The canal proprietors were dilatory to the public, until they became dangerous to themselves. Although the facilities of transit were manifestly deficient; although the barges employed to carry goods often got aground, and were sometimes wrecked by storms; although for ten days during summer the canals were closed; although in very severe winters they were frozen up for weeks: yet they established a rotation by which they sent as much or as little as suited them, and shipped it how or when they pleased. They held levees, attended by crowds, who, admitted one by one, almost implored them to forward their

* Mr. Sandars, the father of the Liverpool and Manchester line, proved that the canal carriers had raised the freight of corn from 6*s.* 8*d.* to 12*s.* 6*d.* per ton, and that of cotton from 6*s.* 8*d.* to 15*s.*, and that the freight in 1822 was three times what it was in 1795.

goods. One firm was thus limited by the supreme wisdom of the canal managers to sixty or seventy bags a day. The effects were really disastrous: mills stood still for want of material; machines were stopped for lack of food. Of 5,000 feet of pine timber required in Manchester by one house, 2,000 remained unshipped from November, 1824, to March, 1825. Every large concern was compelled to keep an extra clerk in consequence of the scarcity of conveyance. In addition to the difficulty of conveying at all, another feature was the extreme slowness of communication. The average time of one company was four days, of another thirty-six hours, and it is on record that it sometimes occupied a longer period from Liverpool to Manchester, than from Liverpool to New York, while the commodity, although conveyed across the Atlantic in twenty-one days, was often kept six weeks in the docks and warehouses of Liverpool before it could be conveyed to Manchester. "I took so much for you yesterday, and I can only take so much to-day," was the reply when an urgent demand was made. One company would not take timber at all; another would only take

a particular sort; a third extended its prohibitions to wheat. A peculiar kind of cotton was objected to by all because it was of great bulk. They limited the quantity; they appointed the time; until the difficulties of transit became a public talk, and the abuse of power a public trouble. The Exchange of Liverpool resounded with merchants' complaints; the counting-houses of Manchester re-echoed the murmurs of manufacturers. The moral and material evil which occurred, when, owing to the absence of supplies, thousands of operatives were thrown out of a day's wages in some large mill, must by its political importance and its personal injury, account for the strong increasing dislike to the agents of the canal proprietors. Even in 1792 the conveyance for timber had been found insufficient, and in 1822 the quantity imported was double. The difficulty of moving it created a positive nuisance, which only the police of Manchester could treat. The public thoroughfares were encumbered with it; the quays were loaded with it; the crowded streets of that great commercial town were often impassable, owing to the carts and carriages which conveyed it, but which could find no legal resting

place for their burden. It was sometimes deposited so long on the shore that the owners were fined; while corn, of all articles the most important, was bonded and injured by being kept warehoused in one place, because it could not be sent to the other. These pictures are not exaggerated, they are not even highly coloured; Mr. Huskisson, our early free trade minister, confirmed these assertions, and was cognisant of the mischief when he said in the House of Commons that, "Cotton was detained a fortnight at Liverpool, while the Manchester manufacturers were obliged to suspend their labours, and goods manufactured at Manchester for foreign markets could not be transmitted in time, on account of the tardy conveyance."

Various attempts were made to supersede the necessity of the canal, and men submitted to send their most valuable goods on the open road, exposed to pillage and plunder, rather than submit to the delay. Remonstrances being met by rudeness, it became perceptible to all that something must be done, and that the facilities of transit between Liverpool and Manchester must be improved, if those great places were to retain their relative

importance. It was obvious to every thinking man that the gentlemen of Manchester—whose very names were synonymous with intelligent adventure—must feel indignant at the trouble they experienced and the treatment they received; and there seems a decided fatuity in the indifference of the canal owners towards such powerful opponents. The great duke who originated the canals would have behaved otherwise. That he knew the danger which environed his beloved property is evident. "They will last my time," he said; "but I see mischief in these —— tramroads." It was a sentence spoken with that spirit of forethought which had produced canals, and which would at a later period, had he lived, have made the duke one of the most strenuous supporters of the railway.

Such was the peculiar position of Manchester and Liverpool when Thomas Gray went to the principal inhabitants and urged them to take the new mode of locomotion into their consideration. The book which bears his name, published at this period, is remarkable for its foresight; but the energy with which he pressed and pushed the doctrines he taught was more so. The title of

his work was as follows:—"Observations on a general iron railway, or land steam-conveyance, to supersede the necessity of horses in all public vehicles; showing its vast superiority in every respect over all the present pitiful methods of conveyance by turnpike-roads, canals, and coasting traders. Containing every species of information relative to railroads and locomotive engines. By Thomas Gray.

> No speed with this can fleetest horse compare,
> No weight like this canal or vessel bear;
> As this will commerce every way promote,
> To this let sons of commerce grant their vote."

A similar confidence is expressed in the volume. There was no wavering and there was no hesitation. "No obstacles," said the preface, confidently, "can long impede what is found essential to the general welfare." The plan would supersede the necessity of horse-power in all public waggons, stage-coaches, and post-chaises. By the establishment of a general iron railway in a direct line, the distance between the capital and the manufacturing districts and principal cities might be reduced one quarter, and in many cases one-third, instead of the ridiculously winding course the stage and mail-coaches

then daily ran. The permanent prosperity which would arise to commerce from this rapid communication would soon be felt in every corner of the United Kingdom. The mails from London to Manchester and Liverpool might be conveyed within the space of twelve hours, and those to Glasgow and Edinburgh within twenty-four. The farmer would likewise greatly participate in this national improvement. The land now required to produce food for his horses might be cultivated to produce something far more profitable. The various products of the farm, as well as live stock of every description, might be conveyed to any market, in one half the time, at half the expense now incurred.

"If a public meeting were convened by the wealthy merchants and capitalists of the metropolis, the example would soon be followed in the manufacturing districts and principal cities, and the many millions now annually squandered in purchasing and feeding unnecessary horses, might be divided by the holders of shares in a general iron railway company, and in the numerous branch companies which would be established throughout the United Kingdom."

The trouble which this enthusiast took is worthy

of remembrance. In 1820 and 1821 he memorialised Lord Sidmouth. In 1822 he sent five separate petitions to as many ministers of state. In 1823 he again addressed them; in 1824 he petitioned the lord mayor and corporation of the city of London, from whom, however, as from the others, he met with little or no practical attention.

For some time the name of Gray was associated in the minds of those who thought on the subject with the idea of a clever, curious man, who having no capital of his own, was willing to employ the capital of others for his own benefit. It is probable that the enthusiast was not remarkable for caution; that he possessed a mono-mania on his favourite subject is indisputable. "About twenty years ago," says Mr. Howitt in one of his delightful books, "Mr. Thomas Gray, then, like myself, residing in Nottingham, used to be noted for what was considered a whimsical crotchet, namely, that a general system of iron railways might and ought to be laid down, on which trains of carriages drawn by locomotive steam-engines should run, and thus supersede the use of coaches, and also, in a great measure, canal-boats and stage-waggons for goods. This

scheme, it was said, had for years completely taken possession of and absorbed Mr. Gray's whole mind; that it was the one great and incessant subject of his thoughts and conversation; that begin when you would, on whatever subject—the weather, the news, the political movements of the day—it would not be many minutes before, with Thomas Gray, you would be enveloped with steam, listening to a harangue on a general iron railway. Of course Thomas Gray was looked on as little better than a madman, a crotchetty fellow, a dreamer, a builder of castles in the air, one of the race of discoverers of the elixir of life, the philosopher's stone, the perpetual motion. With one consent he was voted an intolerable bore. Thomas Gray and myself came in contact, and true enough he soon broke out on this railway topic: visions of railways running all over the kingdom, conveying thousands of people and hundreds of thousands of tons of goods at a good round trot; coaches and coachmen annihilated; canals covered with duckweed; enormous fortunes made by good speculations, being talked of as sober realities that were to be."

But other claimants have arisen to the pioneer-

ship of the rail at this particular juncture: and the friends of William James, of Snowford Manor, assert that he was the only successful agitator of the subject—the first person who gave the impulse by which the movement was commenced. But, notwithstanding this, and although the last reserve of his fortune was declared to have been expended on the project of the railway system, although he himself said he pursued the cause "with a missionary's zeal, though not with a missionary's salary," it is the writer's conviction that he followed rather than led, availing himself of a public feeling instead of instilling a public taste.* That he adopted the idea of a Liverpool and Manchester railway from or about the same time with Gray, that he was the first who absolutely surveyed the ground between these two important towns, that he suffered pecuniarily, that he drew attention to the scheme, and endured mortifications similar to those of his exemplar, cannot be doubted. In 1822 the above survey between these two places was made under the auspices of Mr. Sandars,

* This gentleman also proposed the London, Rochester, and Shoreham railway in 1825. It was to be worked by locomotives, and was assisted by his pen in the shape of a pamphlet.

who was greatly disposed to assist the system which promised so much. This, though executed by Mr. James, was for various reasons abandoned: but these facts are due to the memory of the Lord of Snowford Manor, and the services of Mr. James will be appreciated when it is said that in a testimonial, intended to benefit the children of this gentleman—signed, too, by the principal engineers of the day, including the names of Stephenson, Rennie, and Brunel—it is stated that his pecuniary sacrifices entitled his family "not only to public sympathy, but also to compensation, it being an acknowledged fact that to their father's labours the public were indebted for the establishment of the railway system."

The claims of Mr. Gray and Mr. James have been well and variously urged: their partisans have persisted in looking only on one side of the shield; and while the friends of Mr. Gray have repudiated the claims of Mr. James, the supporters of Mr. James have thrown doubts upon the originality of Mr. Gray. The following is one claim entered:—

"Mr. W. James of London, was the actual originator of the railway system, by his proposing a

line from Strafford to Birmingham, and subsequently by his more grand project, the Manchester and Liverpool line. William James in his letter to the Prince Regent in 1815, shows that he entertained the idea of rapid locomotion by steam and other agents. William James was really the leader and the only successful agitator of the subject, the first person who gave the impulse by which the movement was commenced. No one could have succeeded in that undertaking but such an one as William James, who all his life had been accustomed to struggle with, and execute difficult projects, who possessed a wide connection with the nobility and great landed proprietors, with whom he was accustomed to mix. To William James belongs the merit of being its earliest agitator in all parts of the kingdom, in making the survey of the first line, in organising the first company, and lodging the first reports and plans of the Manchester and Liverpool railway; and he had done much in experiments and surveys in various places, but without patronage, at his own expense."

There is little doubt in the writer's mind that Gray was, to all practical intents and purposes,

the pioneer of the railway. Although he was neither the inventor nor the improver, he was the adapter; although, as it has been seen, the principle of the locomotive was in operation at various collieries, and although the idea which possessed Gray's mind, as it originated from his visit to these places, had also occupied the thoughts of many others—among them Sir Richard Phillips—yet the application of the principle to public transit, the patience with which the facts were investigated, and the wisdom with which they were brought to bear upon the new theory, rests with Thomas Gray.*

* The following claim, made by our German friends, must be left to the judgment of the reader:—

"It appears that the original inventor of the railroad system was the late principal engineer, Mr. Friederichs, son of a miner in that part of the Herrynian district which belongs to Hanover. His talent for mechanics was soon perceived by an influential gentleman, who solicited the Hanoverian government to furnish him with the means for increasing his practical knowledge in mechanics, and generally cultivating his mind by a tour though Europe. The request was granted, and young Friederichs set out on a tour of several years. Two of them he spent in the salt mines of Gallicia; and it was there that the thought occurred to him of constructing a new machine for the easier conveyance of heavy loads. Certain circumstances compelled Friederichs to consider his plan of a new conveyance; and he finally invented iron rails (exactly as they still are in use), a locomotive engine, and a cart to run from the pit to the silver smelting-house. The cart is a four-wheeled one, and on its frame is placed a wooden chest, which may be filled up with minerals to the weight of from 60 to 80 cwt. The guide sits before the chest, just as the coachman sits on the driving-box; by pressure he is enabled to direct the cart, and also to arrest it at any time,

But honour is due to all. He who in his chamber or study watches through the midnight hour in the inspiration of a great idea, and he who, witnessing the steam ascend, first thinks of its application to scientific purposes, must alike be named with praise. Nor is that great mechanical genius which gave a vigorous life to the locomotive; or that earnest unsubdued spirit which combated with the prejudiced and convinced the capitalist; or that determined man who, in his desire for the public benefit, made surveys and urged schemes, less worthy of honour. It is much to conceive a new idea; it is much to diffuse that idea throughout the land; it is much to apply a new theory to an established power; and it is, indeed, much to devote a life to

however fast it may run. The arrangement is so certain and safe, that to the present day no accident has occurred. The locomotive engine is all of iron. When, in 1811, the King and Queen of Westphalia visited the Herrynian district, the director of mines caused a carriage of the invention of Mr. Friederichs to be fitted up for an excursion; the king, attended by ten gentlemen of his court, mounted the first vehicle, and the queen, attended by the ladies of her suite, stepped into the second carriage, which closely followed the first. They started at the same time, and the distance which usually occupied forty-five minutes took only five. This invention was transferred to England, where Mr. Thomas Gray, of Exeter, advocated it zealously. The simple fact that Mr. Friederichs having invented the railroad system, and communicated his invention to an English gentleman, was all along known among the inhabitants of the Herrynian district and the adjacent country. Wooden rails were never used in the above district.

the propagation of a public principle. All these things were done by men who will long be remembered. The brass on the wayside is not so lasting as their reputation. The names of Anderson, of James, of Gray, will not be readily forgotten: that of George Stephenson is honoured in the present; and at some far-off period, when the "traveller from New Zealand shall, in the midst of a vast solitude, take his stand on a broken arch of London-bridge to sketch the ruins of St. Paul's;"* when the gigantic works, dark tunnels, stupendous bridges, and massive excavations of a dead and decayed nation shall excite the wonder and move the admiration of a new race, it is not impossible that George Stephenson may be to them, as Cadmus was to the elder world, a myth and mystery; his origin lost in the uncertain past, while his memory is an object of reverend respect, if not of religious worship.

* Macaulay's Critical and Historical Essays.

CHAPTER IV.

EARLIEST PROPOSAL FOR THE LIVERPOOL AND MANCHESTER RAILWAY.—OPPOSITION OF THE CANAL PROPRIETORS.—FIRST PROSPECTUS OF THE NEW COMPANY.—ITS CONTENTS.—PROCEEDINGS IN PARLIAMENT.—MR. HUSKISSON'S OPINION OF THE PROJECT.—MODERATION OF THE PROJECTORS.—FEARS OF THE PUBLIC.—OPINIONS OF THE PRESS.—DEFENCE OF THEM.—OPINIONS OF SOUTHEY AND WORDSWORTH.—OPPOSITION IN COMMITTEE.—ABUSE OF MR. STEPHENSON.

It has been said that the first survey for the first railroad was made in 1822, by Mr. James, who, adopting about the same period a similar idea to that of Gray, considered that locomotive engines might be successfully employed on a railway applicable to commercial purposes. It is not to be supposed that such a town as Manchester would long submit to the arbitrary controul of the canal companies; and the insufficiency of the existing modes of conveyance for the increased commerce between Liverpool and Manchester, together with the absolute monopoly enjoyed by the three canal-

interests, induced several gentlemen to lend their countenance and aid to any scheme which promised to rid them of so unsufferable a tyranny. Foremost among them was Mr. Sandars, of Liverpool, who, when Mr. James was introduced to him, exhibiting his drawings and explaining the working of the locomotive, treated him with all the attention he deserved. That it was not cold, or lukewarm, may be judged from the fact that, when James offered to make a preliminary survey of the country for £10 a mile, Mr. Sandars at once agreed to pay the £300 necessary to complete the entire distance. The agreement was entered into, the survey was made; and well may the friends of Mr. Sandars claim for him the title of "father and founder of the Liverpool and Manchester railway."

The scheme was, however, temporarily abandoned; partly on account of the engineering difficulties, and partly because the opposition of the landholders was excited by the canal proprietors, who delaying until too late a reduction of their charges, the only opposition that could be effectual, found, when they could not avoid it, that they had made a great mistake.

At length the fate of the canal was sealed. The annoyance to which the commerce of Liverpool had been subjected, the difficulties which the manufacturers encountered, the pecuniary loss, and the mental irritation, together, probably, with a great increase of unemployed capital, combined to bring about the first phase of that extraordinary change in locomotion which is not even now fully developed. A declaration was signed by one hundred and fifty of the leading merchants that a new line of conveyance was absolutely necessary. A meeting was convened at Liverpool to consider the preliminaries and the practicability of the plan. A railway was determined on, and a subscription entered into to defray expenses. A committee was then formed; but as they were anxious, if possible, not to quarrel with the canal proprietors, provided only they could obtain proper business facilities, a formal application was made to the agent to reduce the charges and increase the accommodation. The application proved vain; an unqualified refusal was given, and the committee retired. Disappointed, but not dismayed, they returned to the charge. The agent was then informed, that if no

extra assistance were given by the canal, the capitalists of Manchester and Liverpool were prepared to form a railway between the two towns. The assertion was probably disbelieved, or the power doubted. A railway was a kind of fable. It had been talked of until it became a tradition. When, therefore, an offer of shares in the new undertaking was made to the canal agent, his answer, owing, probably to the above feeling, manifested as much ignorance of a railroad as it did insolence towards the proposers. "All or none," was his contemptuous reply. "They scouted," says a writer of the time, "the very notion of the smallest reduction; they wallowed in their dividends with a confidence that must always be impolitic and presumptuous; when not perfectly secure, they engendered the elements of that opposition they at first ridiculed, but now respect; and they frittered away their concession in a manner that excited the mirth of their opponents and the pity of their friends." "The fact is notorious," wrote another, "that the manner in which irresponsible power had for some time been exercised, accelerated a crisis which might have been delayed." Great fear and confusion of mind fell upon canal

proprietors; nor was the coach owner particularly happy with the prospect which opened before him.

The 29th October, 1824, was the date attached to the first prospectus of the Liverpool and Manchester railway company; and that prospectus, in the calmness of its utterance and the almost dignity of its tone, formed a marked contrast to many which have succeeded it. The opposition of the landowner was alluded to and deprecated. "The road," said the document, "does not approach within about a mile and a half of the residence of the Earl of Sefton, and traverses the Earl of Derby's property over barren mosses, passing about two miles from the hall." The first names in the district were attached to it, and "the importance to a commercial state of a safe and cheap mode of transit for merchandise," was made a prominent consideration. "It is competition that is wanted, and the proof of this assertion may be deduced from the fact that shares in the old Quay navigation, of which the original cost was £70, have been sold as high as £1,250." "The canal establishments are inadequate to the great object to be accomplished—the regular and punctual convey-

ance of goods at all seasons and periods. In the summer time there is frequently a deficiency of water, obliging boats to go only half loaded. In winter they are sometimes locked up for weeks together." The total quantity of merchandise passing between Liverpool and Manchester was estimated at 1,200 tons a day, of which the average time of passage was thirty-six hours, and the average charge 15*s*. a ton. The astonishing fact already given to the reader, that goods were frequently brought across the Atlantic from New York to Liverpool in twenty-one days, while cotton had been longer on its passage from Liverpool to Manchester, was solemnly recorded. And, pursued the paper, "By the projected railroad, the transit of merchandise between Liverpool and Manchester will be effected in four or five hours, and the charge will be reduced one-third. Here then will be accomplished an immense pecuniary saving to the public, over and above what is perhaps more important—economy of time. Nor must we estimate this saving merely by its nominal amount, whether in money or in time: it will afford a stimulus to the productive industry of the country;

it will give a new impulse to the powers of accumulation, the value and importance of which can be fully understood only by those who are aware how seriously commerce may be impeded by petty restrictions, and how commercial enterprise is encouraged and promoted by an adherence to fair competition and free trade."

The principle, therefore, on which the country was invited to co-operate in the great experiment, was the public good. It was a principle at which the canal proprietors scoffed, and which the coach proprietors ridiculed.

The estimated expense of the entire line was given at £400,000; and the passenger traffic—that traffic which has formed so marked a feature in railroads—was cautiously alluded to. "Moreover," continued the prospectus on this point, "as a cheap and expeditious means of conveyance for travellers, the railway holds out the fair prospect of a public accommodation which cannot be immediately ascertained."

This prospectus created great interest. The excitement which was prevalent throughout England at the period, the freedom with which money was

invested in foreign mines and foreign loans, in domestic milk companies, and domestic umbrella societies, was an additional assistance to those who were promoting the project, and the shares were taken without difficulty. The line previously examined by Mr. James was abandoned, and Mr. George Stephenson was employed to make a new survey. An application was immediately made to the House of Commons to grant a bill, and a most determined opposition ensued: every clause of that great argument was opposed; every fallacy which had been refuted was again repeated; facts were most obstinately mis-stated, and falsehoods confidently asserted as facts. The bill was argued against by one gentleman, "because there were already three canals between Liverpool and Manchester. They were rival companies, interested in opposing each other, and the competition produced a reduction of rates. It would interfere with private property. He knew one individual whose land was bounded by a canal on one side, and by the high road on another, and now they were going to run the railway through the centre of his estate." This logical reason why the proposed railway bill

should not become the law of the land was probably conclusive only to canal proprietors and to the honourable member himself. Mr. Huskisson said, and the remark is worthy notice, coming from this eminent man, "that the promoters of the scheme had a higher object than the mere accumulation of wealth through this channel. They would render a great commercial benefit to this country. The subscribers were the merchants, bankers, traders, and manufacturers of Liverpool and Manchester. They had agreed that no person should hold more than ten shares each. He had seen the parties interested, and they had declared they were willing to limit the amount of dividends to ten per cent., and that they would be perfectly satisfied with five per cent."

When the canal companies saw that the railway was likely to become what has since been termed a great fact, a wonderful change took place. Their fear conquered their pride, and they attempted to propitiate the merchant. They, who once had laughed at such an application, now lowered their charges. They, who once had haughtily declared it to be impossible, now increased their accommodation.

One canal company offered to reduce its length three miles out of forty-two, at an expense of many thousands of pounds. They saw now, as the father of canals had seen half a century before, "mischief in those —— tramroads." But despite of this, though they deprecated where they once had defied, they found their efforts vain, and their offers of accommodation too late.

The railway was determined on; and every interest, direct or indirect, which the canal proprietary, as influential, perhaps, as any company that ever existed, could exert, was brought to bear on their formidable and fatal opponents. Next to the canal owner, the most important opposition was naturally expected from the landholder, and by both interests every art was used to produce an effectual hindrance. Every report which could promote a prejudice, every rumour which could affect a principle, was spread. The country gentleman was told that the smoke would kill the birds as they passed over the locomotive. The public were informed that the weight of the engine would prevent its moving; and the manufacturer was told that the sparks from its chimney would burn his

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goods. The passenger was frightened by the assertion that life and limb would be endangered. Elderly gentlemen were tortured with the notion that they would be run over. Ladies were alarmed at the thought that their horses would take fright. Foxes and pheasants were to cease in the neighbourhood of a railway. The race of horses was to be extinguished. Farmers were possessed with the idea that oats and hay would no more be marketable produce; cattle would start and throw their riders, cows even, it was said, would cease to yield their milk in the neighbourhood of one of these infernal machines.

The provincial and metropolitan press were busied with argumentative articles. The *Birmingham Gazette* of 6th December, 1824, invited opposition in an advertisement bearing sixty-three signatures; which, when subjected to a severe examination, proved to be in the proportion of eighteen landowners and canal proprietors, to forty-five of their tenants. The Leeds, and Liverpool, the Birmingham, and other corporations, called on every navigation company in the kingdom to oppose railways wherever contemplated. The *Quarterly*—and it is most

important to examine the views of these exponents of public opinion—wrote in 1825, "The gross exaggeration of the powers of the locomotive steam-engine, or, to speak more plainly, the steam-carriage, may delude for a time, but must end in the mortification of those concerned. * * * It is certainly some consolation to those who are to be whirled at the rate of eighteen or twenty miles an hour, by means of the high-pressure engine, to be told that they are in no danger of being sea-sick while they are on shore, that they are not to be scalded to death nor drowned by the bursting of the boiler, and that they need not mind being shot by the scattered fragments, or dashed in pieces by the flying off, or the breaking, of a wheel. But with all these assurances we should as soon expect the people of Woolwich to suffer themselves to be fired off by one of Congreve's ricochet rockets, as trust themselves to the mercy of such a machine going at such a rate. * * * We will back old father Thames against the Woolwich railway for any sum."

Such were the opinions of the disbelievers; nor were some who were favourable much more pro-

pitious in their views: anxious not to excite too great a hope, they tended to produce depression. Thus, "it is far from my wish," said Mr. Nicholas Wood, "to promulgate to the world that the ridiculous expectations, or rather professions, of the enthusiast speculator will be realised, and that we shall see engines travelling at the rate of twelve, sixteen, eighteen, or twenty miles an hour. Nothing could do more harm towards their general adoption and improvement than the promulgation of such nonsense."

These opinions were thoroughly justified by the existing state of mechanical science in comparison with the difficulties to be overcome. The reviewer was not alone in his opinion. He was supported by scientific men, who denounced railroads as wild and visionary; but it has become a habit with most writers to quote the opinions of the press generally, and the above paragraph in particular, as evidence of a remarkable want of foresight. It must be remembered, however, that the period was one of intense excitement; that bad, base men were projecting companies under any and every pretence; that schemes were proposed and capital called for

under circumstances which made every thinking person watchful. It was at this period that railways were schemed for every county in England; and that some one, far in advance of that day, projected an iron way from Dover to Calais. The wants and wishes of every class were addressed with specious and special care. The public was tempted to throw its money after delusive schemes, and it became a peremptory duty of the press to caution that public against projects, which, appearing to address themselves to reason, were only fit subjects for ridicule. The proposal of an iron road, of carriages moving by steam, of thirty miles an hour, of excavated rocks, of deep cuttings, of high embankments, of long tunnels, of tremulous bogs bearing gigantic weights, of effects produced in two hours which sometimes occupied two weeks, appeared both false and frivolous. For the reviewer to have argued differently, would have required the gift of prophecy or the practical power of a Stephenson. At any rate the opinions expressed were honest; and, therefore, honourable to all save those who, making them the subject of a disingenuous ridicule, evidence their wit at the expense of their

wisdom. The ideas of Mr. Wood and the *Quarterly* reviewer were then the ideas of nearly the whole world. They remained the general opinion for a long period. It will be seen that, ten years after this, the indignation of the many descended upon railroads; that when even they had become an established fact, and when they had changed the face of the land, educated, intelligent men were not wanting to declare we must return to our old established habits. It is a recorded fact that, twenty years later, the learning of Southey, and the imaginative power of Wordsworth, only taught the former to speak disparagingly of, and the latter to vent his indignation in a sonnet on the iron way. It is necessary to remember these things as this history proceeds, that the wrath of the reader may be modified by his reason.

When the bill went into committee, the opposition was strong and severe. Satire and argument were alike brought to bear upon the subject. The witnesses were subjected to a severe cross examination; Mr. Stephenson was attacked with an undeserved severity; the claims of the land-owner were placed in a prominent position; the locomotive was laughed

at, the speed was denied, and the Exchange of Liverpool denounced for having aided and abetted so preposterous a plan. "It was the most absurd scheme that ever entered the head of man to conceive." "Public profit," said another, "is always the plea for private benefit." Another "would sooner give £10,000 than have the steam-engines come puffing near him." A third declared it afforded no practical advantage over a canal. "If this railroad is to be made," said a fourth, with a bathos rarely equalled, "we must quit the place where we have lived so long and happily; we must leave it—we must go away."

Vegetation, it was prophesied, would cease wherever the locomotive passed. The value of land would be lowered by it; the market gardener would be ruined by it. The canal could carry goods cheaper. Steam would vanish before storm and frost; property would be deteriorated near a station. It was called the greatest draught upon human credulity ever heard of. It was erroneous, impracticable, and unjust. It was a great and scandalous attack on private property, upon public grounds. The most contradictory reports were current. Prejudice rode

paramount; and while one class was informed that the locomotive would travel so fast that life and limb would be endangered, another was told that it would be too heavy to travel at all.

A great point with the disaffected was Chatmoss. Over this wavering, trembling place the locomotive was to travel. There was nothing, said the opposition, but long, sedgy grass to prevent it from sinking to the shades of eternal night. No engineer in his senses would try to make a railroad through Chatmoss; and if this bill were got, another would be required to emerge from it. It was an immense mass of pulp, which swelled in wet and sunk in dry weather.

But the most vehement abuse was bestowed upon Mr. Stephenson; the most virulent opposition reserved for him: and the following extracts from a mass of gross assertion is a curious specimen of the liberality of feeling which attends the promoter of a new scheme. He was said to be utterly devoid of common sense. He was taunted with attempting an impossible ditch by an impossible railway; with making schemes without seeing the difficulties; with being industrious only to deceive; with being

anxious to get everything but the truth. "I say," said one, "he never had a plan; I do not believe he is capable of making one. His is a mind perpetually fluctuating between opposite difficulties; he neither knows whether he is to make bridges over roads or rivers: or of one size or another; or to make embankments, or cuttings, or inclined planes, or in what way the thing is to carried into effect."

"Mr. Stephenson speaks of an arch which is to cost £375. How high is it to be? He does not know. At what rate per yard? He cannot tell. Whenever a difficulty is pressed, as in the case of the tunnels, he gets out of it at one end; and when you try to catch him there, he gets out at the other." He had embankments where he should have had cuttings; he had cuttings where he should have had embankments. So great a specimen of rashness and ignorance was never before exhibited. There was a shuffling manner of going into the whole of his estimates. There was nothing to which he would not bend himself, nothing to which he would stick.

Such were a few of the personal expressions of

wrath towards Mr. Stephenson; and the locomotive came in for its share. Expeditious it could not be, whenever "Providence in Lancashire sent mizzling weather." The wind, if higher than usual, would prevent it from running; the rain would stop it; the snow would upset it. It was quite idle and absurd to say the present scheme could be carried into execution under any circumstances or in any way. The subscribers would lose all their money; the scheme was bottomed on deception and fallacy. They would not go so fast as the canal or so safe as the coach. The engine would burst, and the wheels would fly off.

The most dangerous and important opposition, however, was that which proved errors in the sections and surveys of Mr. Stephenson; and though that gentleman candidly allowed that they were so, it was a most important feature in an examination on which the fate of the bill depended. The difficulties thrown in his way must be accepted as the defence. Although by their resistance they drove him to take his survey secretly, they did not hesitate to charge him with the consequences of their own opposition. He had "trodden down the

corn of widows," he had "destroyed the strawberry-beds of gardeners," he had "committed trespasses," he had "violated private rights." He was threatened by peers, he was attempted "to be ducked" by commoners. With such difficulties in his path, the wonder is not that his survey was incorrect, but that he was able to take one at all.

Mr. Stephenson said, in after times, that he was scarcely in the witness-box before he wished himself well out. The picture of such a mind exposed to vulgar taunts, to sneers, to satire, is painful, yet instructive. The professional pathos of counsel, the jargon of men crammed for a purpose, the free and fluent speech of those who were paid to

> Make the worse appear the better cause,

must have filled the mind of Mr. Stephenson with pity allied to contempt. Nor is it to be wondered at, that the "untaught, inarticulate genius," as he has been finely called, stood confounded before the class which opposed him. But be it remembered that, if he hesitated, it was from depth and not from shallowness of thought; it was because he feared to astonish rather than feared to inform his hearers. Let it

be remembered, too, that he had to accommodate his language to his listeners; that his directors implored him not to express fully his opinion; that even when, in obedience to their wishes, he only recommended a speed of eight miles an hour with twenty tons, and four miles with forty tons, the committee deemed him mad, and the counsel ridiculed him; that he was sneered at as a visionary and pitied as a lunatic. The bill failed. A discussion of thirty-seven days in the committee of the House of Commons was closed by the two first clauses being negatived.

It is both curious and interesting to look back on the state of public opinion and the lassitude of public feeling. The world of England would not believe in railways, and a small proprietary was forcing it on them. And so it ever is; the few fight the battle, the many claim the benefit. From his obscure home the student emits the first ray of light, and he is called a dreamer. In his workshop, or at his loom, the mechanical genius broods over the thought, applies it mentally, spends his last shilling on it, and dies ere he has been able to offer it to the world. It comes into the

possession of one contemptuously pronounced a projector, who sees its value and seizes on the idea: he passes his time in waiting on the capitalist, in exhibiting its uses, in showing its profits. The monied man assists; a company is formed; efforts to penetrate the apathy of the public are made. The opposition of the interested is neutralised. The world is told that a great and beneficial change is at hand; but, indifferent to that which it cannot comprehend, it shouts the hackneyed cry of innovation. The shrewd, sagacious merchant employs the pamphlet and the press; he has given his capital, and there is no pause. Onward, silently and surely, the good cause speeds, unheard-of or uncared-for by the many, but still day by day increasing, until the discovery is perfected, the invention is complete, and the public rejoice in the good which they lately abused. It is thus with all our great inventions; thus with all that graces the person or gratifies the taste; thus with all which gives a comfort to the poorest or a luxury to the richest home: and the inventor, the adapter, the capitalist, are all links in one great chain of human good. To all and each belong the several

meeds so justly their due, while to the public alone belongs an apathetic indifference. The writer has previously written on the same subject, but he feels so acutely for the dark hours of those whose doom it is to create in silence and in sadness, and to project amid ridicule and contempt, that he trusts he may be pardoned this digression in a volume devoted to the progress of the greatest idea of the century.

CHAPTER V.

NEW PROSPECTUS ISSUED. — PROPITIATION OF A CANAL COMPANY. — NEW SURVEY. — OBJECTIONS IN PARLIAMENT. — THE BILL PASSED. — ANALYSIS OF THE RAILWAY DIRECTORATE. — NAMES OF FIRST AND SECOND COMMITTEE. — LOCOMOTIVE CHOSEN. — PRIZE OFFERED FOR THE BEST LOCOMOTIVE. — GAINED BY THE ROCKET. — CHATMOSS. — HENRY BOOTH.

THE first attempt in parliament had failed, but the directors had lost no jot of heart or hope. They assembled their friends, discussed their difficulties calmly, and the more closely the question was canvassed the more evident it became that railways must form the locomotive power of England. The difficulties thrown in their way were temporary, but the principle was true. Their first efforts were therefore turned to the errors discovered in the sections and levels. These were corrected; attempts were also made to soften and subdue the landowners. A new prospectus was issued. The estate of Lord Sefton, who had opposed the bill, was

entirely avoided, while a few detached fields of the estate of Lord Derby—"far removed from the Knowlsby domain"—were the only portions desecrated. "The committee have to state," pursued this interesting document, "that they have spared no pains to accommodate the exact route to the wishes of proprietors whose estates they cross, by removing the road to a distance from the mansions of proprietors, and from those portions of estates more particularly appropriated to game preserves." But the important part of the document was the following: "The opposition of the most powerful of the existing establishments has been removed, by the Marquis of Stafford having for himself, and those of his family who are beneficially interested in the profits of the Duke of Bridgewater's canal, become a subscriber to the extent of one thousand shares."

Thus was the great canal proprietor propitiated, and thus was the way paved for success. But the storm, though subdued, was not entirely silenced. The streets through which the new line was to pass arose in a mass against it. The old Quay company objected because a bridge was to be formed

over the Irwell; the Leeds and Liverpool canal resisted because it was to pass under their stream. So the streets which objected were avoided, while the objection of the companies was subdued by the line neither crossing the canal nor tunnelling the river.

When the railway directors determined once more to try their fate in parliament, it was thought better, as Mr. George Stephenson was comparatively unknown, to employ as engineer to the company some name better known to the world. George and John Rennie were, therefore, invited to the post; and being appointed to make a fresh survey, the committee, on the recommendation of these gentlemen, determined to adopt a new route, passing to the south of that surveyed by Mr. Stephenson. The energy of the proprietors was employed to carry this plan into operation. The necessary documents were prepared with due diligence; great exertion was made by the engineers; and so successful were the operators, that in three months the standing orders were complied with. The errors which had been almost unavoidably committed were candidly acknowledged. Every sacrifice, save that

of honour, was made, to further the great scheme; the very locomotive was temporarily abandoned rather than peril the passing of an Act on which so much depended; and the inconvenience which in the first survey had been made a subject of complaint, of crossing public thoroughfares, was removed or obviated. That the directors were in earnest was proved; that there was no factious feeling on their part, is now acknowledged, while all must admire the moderation with which they appealed to public opinion in their new prospectus.

"It becomes a question of serious import whether this country, which is indebted for so much of her wealth, and power, and greatness to the bold and judicious application of mechanical science, shall now pause in the career of improvement, while it is notorious other nations will adopt the means of aggrandisement which we reject; whether England shall relinquish the high 'vantage ground she at present possesses, not more with a reference to the direct operations of commerce and manufactures than generally in the successful application of the most important principles of science and art."

When the bill was once more introduced into parliament, an interesting discussion occurred, and the objections brought against the innovation were given with all the force of senatorial dignity. Mr. Stanley undertook to prove that the railway would take ten hours in its journey, and that the trains could only be worked by horses. Sir Isaac Coffin denounced it as a most flagrant imposition. He would not consent to see widows' premises invaded; "and how," he added, with great and dignified feeling, "how would any person like to have a railroad under his parlour window?"

It was in vain that Mr. Huskisson announced his main object to be the destruction of the overgrown monopoly enjoyed by the canals; and it was in vain he informed the members that, whereas the canals divided a hundred per cent., the railway would be contented with ten. He was met with arguments which even Mr. Huskisson was unable to answer satisfactorily to the recipient.

"What was to be done," said his opponent, "with all those who have advanced money in making and repairing turnpike-roads? What with those who may still wish to travel in their own or hired car-

riages, after the fashion of their forefathers? What was to become of coach-makers, and harness-makers, coach-masters, coachmen, inn-keepers, horse-breeders and horse-dealers. The beauty and comfort of country gentlemen's estates would be destroyed by it. Was the House aware of the smoke and the noise, the hiss and the whirl which locomotive engines, passing at the rate of ten or twelve miles an hour, would occasion? Neither the cattle ploughing in the fields or grazing in the meadows could behold them without dismay. Lease-holders and tenants, agriculturists, graziers, and dairy-men would all be in arms. * * * Iron would be raised in price one hundred per cent., or, more probably, it would be exhausted altogether. It would be the greatest nuisance, the most complete disturbance of quiet and comfort in all parts of the kingdom, that the ingenuity of man could invent."

Notwithstanding such verbal and vituperative objections, the bill was this time successful, and the directors believing, after mature deliberation, that Mr. Stephenson, from his extensive practical knowledge, was most desirable as an engineer, appointed him to that important situation, although the survey

which had been passed by parliament had been formed by Mr. Rennie.*

The bold and business-like conduct of the company had met with its reward; and, to use the words of Mr. Whishaw in his great statistical volume on railways, "They truly should be numbered among England's benefactors, whose names are recorded in the prospectus first issued by this company. So great was their zeal in this formidable undertaking, that notwithstanding the violent and costly opposition which they met with in their first application to parliament, they proceeded with renewed vigour during the recess to prepare themselves with more perfect plans and sections for a second application in the following year, so fully were they convinced, that though they might incur a vast outlay before they could even obtain an act of parliament, their efforts would be crowned with success, and the results prove nationally advantageous."

The directorate of this railway was composed of

* Mr. Booth states that Messrs. Rennie, if they undertook the superintendence of the works, could only make six visits yearly, of seven or ten days each visit. They claimed also the privilege of naming the resident engineer. These propositions were declined, and thus originated what some have termed a grievance towards Mr Rennie.

men who could scarcely be paralleled in importance by any place in the world, save that which produced them. The names which were on its list were the names of merchants and of manufacturers responsible for millions. But great as their pecuniary power, their moral and intellectual importance equalled it. The firm of Gladstone—a name now regarded by England as that of one of her trusty statesmen—gave an assurance that the motto of that great local house was "*en avant.*" Another name, that of Cropper, represented the wealthy interest which was founded by Fox, and has since been adorned by a Fry. The mercantile character of this gentleman was only equalled by his private character; and the man who, having placed his family in the position which was their due, could devote his entire energy, intellect, and fortune to the benefit of others, demands our praise, and deserves the honour bestowed upon his memory by those who know him.

The following are the names appended to the first and second prospectus:—

Committee

OF

Liverpool and Manchester Railway.

Charles Lawrence—Chairman.

Lester Ellis,
Robert Gladstone,
John Moss,
Joseph Sandars. } Deputy Chairmen.

Robert Benson
H. H. Birley
Joseph Birley
Henry Booth
Thomas Shaw Brandreth
James Cropper
John Ewart
Peter Ewart
William Garnett
Richard Harrison
Thomas Headlam
Adam Hodgson
Isaac Hodgson
Joseph Hornby
John Kennedy
Wellwood Maxwell
William Potter
William Rathbone
William Rotheram
John Ryle
Thomas Sharpe
John Wilson

George Stephenson—Engineer.

Second Prospectus.

Charles Lawrence—Chairman.

Robert Gladstone,
John Moss,
Joseph Sandars. } Deputy Chairmen.

Robert Benson, Liverpool
H. H. Birley, Manchester
Joseph Birley, do.
Benjamin Booth, do.
Henry Booth, Liverpool
T. S. Brandreth, do.
John Ewart, do.
Peter Ewart, Manchester
R. H. Gregg, do.
R. Harrison, Liverpool
Thomas Headlam, do.
Adam Hodgson, do.
Isaac Hodgson, do.
Joseph Hornby, do.
John Kennedy, Manchester
Aaron Lees, do.
W. Maxwell, Liverpool
William Potter, do.

William Rathbone, Liverpool	Thomas Sharpe, Manchester
William Rotheram, do.	John Wilson, Liverpool
John Ryle, Manchester,	George and John Rennie—Engineers.

Among the many dangers and difficulties which beset the directors, was the nature of the power to be used. The opposition which the railway had received on personal grounds was extended to the locomotive. Its unpopularity with the ignorant can scarcely be described; the horrors of the infernal regions were figured by it. Death and dismay were familiarly connected with it, and it argues great boldness and perseverance in its friends, that, anxious to avail themselves of every invention which science had placed at their disposal, competent persons were employed to report from personal inspection on the powers and practice of the engines they saw, and the tramroads they visited. In October 1828, therefore, three of the directors, aided by Mr. Booth, went to Darlington and the neighbourhood of Newcastle. On their return, although they brought with them a fund of information, it was of so mixed and contradictory a character that the question still remained unsettled. One step was gained; as the deputation was convinced that for so immense a portion of traffic,

anticipated by the Liverpool and Manchester line, "horses were out of the question."

Another movement was then made: Mr. James Walker, a London, and Mr. Rastrick, a northern engineer, were employed to report on the merits of the locomotive and the fixed engine; and the opinions of these gentlemen are worth recording, because they prove that the locomotive, even with the profession, was unfavourably regarded. "As a general answer," says Mr. Walker, "I should say that the stationary is the safer, chiefly from the locomotives being high-pressure engines and accompanying the goods or passengers on the way." Mr. Rastrick considered that "locomotives weighing more than eight tons could not be conveniently used to get a speed of more than ten miles an hour;" but he said, "I am decidedly of opinion that fifteen miles per hour on a railroad may be travelled in perfect safety, both to goods and passengers."* An answer, considered theoretically con-

* It need not be said that recommendations and suggestions poured in on the gentlemen who formed the direction. If the engineers generally were against the locomotive, Mr. Sandars and his friends supported it, and Mr. Stephenson was earnest for it. Mr. Booth, in his "Account of the Liverpool and Manchester Railroad," a pamphlet now difficult to be procured, says,

clusive, from Mr. Robert Stephenson and Mr. Locke, was followed by the determination to try the locomotive. "The nature of the power to be used," said the report which ensued, "for the conveyance of goods and passengers becomes now a question of great moment; after due consideration, the engineer has been authorised to prepare a locomotive engine, which, from the nature of its construction, and from the experiments already made, he is of opinion will be effective for the purposes of the company without proving an annoyance to the public."

A most judicious resolve was the result; a public announcement being made that a premium of £500

with a humour not always found among the class to which he belongs, "multifarious were the schemes proposed to the directors for facilitating locomotion. Communications were received from all classes, each recommending an improved power, or an improved carriage; from professors of philosophy down to the humblest mechanic, all were zealous in their proffers of assistance. England, America, and Continental Europe were alike tributary. Every element, and almost every substance were brought into requisition and made subservient to the great work. The friction of carriages was to be reduced so low that a silk thread would draw them, and the power to be applied was so vast as to rend a cable asunder. Hydrogen gas and high-pressure steam; columns of water and columns of mercury; a hundred atmospheres, and a perfect vacuum; machines working in a circle without fire or steam, generating power at one end of the process and giving it out at the other; carriages that conveyed every one its own railway; wheels within wheels to multiply speed without diminishing power, with every complication of balancing and countervailing forces to the *ne plus ultra* of perpetual motion."

would be given to the owner of the locomotive which, on a certain day, should perform certain conditions in the most satisfactory manner.* This challenge to the engineers of the country produced its effect. Independently of its proving the power of the locomotive, it was calculated to remove prejudices from the minds of those who might witness the trial, and thus create a certain moral effect on its behalf throughout the country.

The sixth of October, 1829, was chosen for the day of trial, and great was the interest. The adjacent country poured forth its thousands. Every class of social life sent a representative. The farmer who had anathematised it, came to wonder; the operative who could understand it, came to praise.

* The conditions given forth on 25th April, 1829, were,

1. The engine should consume its own smoke.

2. An engine of six tons should draw twenty tons, at ten miles an hour, with a pressure of not more than fifty pounds.

3. For two safety valves, one beyond the reach of the engine man.

4. The engine to have springs and six wheels, and not to be more than fifteen feet high to the top of the chimney.

5. The engine, with water, not to weigh more than six tons, and if less, would be preferred, on its drawing a proportionate weight, and an engine weighing only four and a-half tons might be put on only four wheels.

6. For a mercurial gage, showing the steam pressure above forty-five pounds to the inch, and to blow out at a pressure of sixty pounds.

7. The engine to be sent to Liverpool not later than 1st October.

8. The price of the engine to be not more than £550.

Wherever a glimpse could be caught of the new machine, the space was filled with expectant eyes. Engineers from all quarters of the kingdom looked significantly on. The man of science interested in the dawn of a great change, awaited eagerly the result. The representative of letters was there to record the advent of a power as fruitful as his own. The Earl of Derby came to rejoice in its failure; the directors were there to enjoy its success. Many a youthful student of mechanics left his books, and many an intelligent artisan forfeited his wages to catch the first glimpse of that power which was to renew the youth of England.

The engine termed the "Novelty," built by Messrs. Braithwaite, was the favourite. Light, elegant, and compact, the boiler, which in the "Rocket" of Mr. Stephenson bore a somewhat ungainly aspect, was in the "Novelty" almost hidden from the sight. With curious, wondering eye, the public gazed on the cumbrous machines; and great was the pleasure of assembled thousands when they saw its huge bulk moving at a speed which wearied the eye and excited the brain but to follow it. For several days the initiatory movements continued,

and the excitement lasted. Shops, warehouses, and counting-houses were thinned, that their owners might enjoy the public triumph. Liverpool forgot its commerce and Manchester its trade. Weighing four tons three hundred-weight, dragging also three times its own weight, the "Rocket" performed the conditions prescribed on the second day; and when, detached from all encumbrance, the bye-standers saw the engine dart along the road with a rapidity analagous to that with which the swallow cleaves the sky, the air was filled with sounds of praise and wonder.

In the definite trial, to which the others were only introductory, the "Sans Pareil" of Mr. Hackworth, the "Novelty" of Mr. Braithwaite, and the "Rocket" of Mr. Stephenson, tested their capabilities; the result was that the machinery of the "Sans Pareil" failed, the boiler of the "Novelty" burst, while the "Rocket," after fulfilling all the conditions imposed, performed various amateur journeys with amateur passengers, yielding the honour of that noble victory to him whose name is indelibly associated with the triumph of the rail.

The engineers were said to be surprised at their

own success; the public which once doubted now believed; and it is probable that Lord Derby saw the folly of denying the power he could not stay.

The greatest speed attained by the "Novelty" was rather less than twenty-three miles an hour, while that of the "Rocket" was rather above twenty-nine miles in the same time. If the success of the locomotive were great, the effect on the shares was equally so. The price rose £10 per cent., and the £500 paid Mr. Stephenson sunk into insignificance compared with £65,000 increased value on the capital stock.

It was little thought by those who wondered at the rapid movements of the "Rocket," that on it as driver sat one whose name, nearly a quarter of a century later, would be identified with the great triumph of the year 1851. Son of a medical practitioner, destined for the same profession, marrying for love at an early age, and immediately finding that "fathers have flinty hearts," Charles Fox, the future builder of the Crystal Palace, determined if he could not gain his living by his head to earn it with his hand; and greatly to his honour is the fact that he guided the engine which Stephenson

built, and aided to win the prize which Stephenson received.

Although this line was only thirty miles in length, some notion of its engineering character may be formed from the fact that, independently of culverts and footways, there were sixty-three bridges, thirty of which passed under the turnpike road, twenty-eight over it, four over streams, and one over the river Irwell; while, in its formation, the various excavations yielded upwards of three million cubic yards of stone, clay, and soil.

The reader will have seen that the attempt to make a road over Chatmoss excited great derision. Extending four miles on the line of road; composed of a dreary impassable waste; celebrated by Michael Drayton as having its origin at the deluge; chronicled by Camden as "a swampy tract of great extent;" the abode of the plover by day, and lighted only by the fire-fly at night; it seemed to the uninitiated as easy to tunnel Tartarus as to send an engine over Chatmoss. And it is characteristic of the engineer who proposed it, that though unable to develope his plan to a public audience, he was yet able to carry it out for the public

benefit. The words of Mr. Stephenson will best relate the difficulties with which he contended, and the skill with which he executed his task, "Chat-moss," he says, in a letter dated 1st November, 1828, "extends four miles on the line of road; on each side of the moss the land lies low; on the western side an embankment is formed of moss nearly a mile in length, and varying from ten to twenty feet in height, which stands extremely well; the slopes of this embankment are a little more upright than the angle of forty-five, which, from our experience, stands better than if more inclined. It is now covered with a material, from two to three feet thick, consisting of sand and gravel. The permanent road is laid upon this covering, and remains very firm; the quantity of excavations made in the moss to form the embankments adjoining, amount to 520,000 cubic yards. That portion of the moss, about three-quarters of a mile from the western edge, called the "flow-moss," from its extreme softness, is also covered with sand and gravel; underneath I have laid hurdles thickly interwoven with twisted heath, which form a platform for the covering. Two years ago a person was not able

to walk over this portion of the moss, except in the dryest weather; at present we have horses travelling with loads of from six to twelve tons."

Over this moss, which had, in an attempt to cultivate it, destroyed the fortunes of the polished historian of Leo and Lorenzo, the carriages of the railway now pass hourly. And seldom does the passenger bestow his tribute on the power which triumphed over so great a difficulty—which, in opposition to the sneer of the sceptic and the anxious silence of friends, in spite of the doubt of some and the despair of others—carried out a plan, where to fail would have been ruinous, and to succeed was to be depreciated. It must be some pride to the proprietary, that at this juncture they supported Mr. Stephenson; and some satisfaction to the men of the two great Lancashire towns, that they gave their capital to the genius of their engineer when most men would have retired in dismay.

The name of its particular promoter must not be omitted in recording the services of those who forwarded the project and assisted the prospects of the line. Interested in railways generally, the author of an improvement in the early locomotive,

the writer of an important pamphlet on the subject to which he devoted his life,* the name of Henry Booth is not only associated with this line, it is associated with the entire system. He, among others, has been termed the founder of modern locomotion; and the writer has seen sufficient confidently to assert that to this gentleman not only the Liverpool and Manchester, but the entire world of railways, is greatly indebted. More than a quarter of a century has now elapsed since Mr. Booth first agitated for this line, and he has lived to see his agitation successful; to witness the discomfiture of those who opposed him; to rejoice in the success of those who assisted him; and to behold that system for which he so zealously fought, an integral portion of English commerce, of English capital, and of English comfort.

* It is scarcely asserting too much to say that Mr. Stephenson was indebted to Mr. Booth for his success at Rainhill, as from a suggestion of this gentleman the "Rocket" was made by Mr. Stephenson to present a greater surface to the fire than its competitors.

CHAPTER VI.

RAILWAY EXCITEMENT OF 1825.—ITS FEATURES AND PROMOTERS.—THE KENTISH RAILWAY.—LIST OF PROPOSED RAILWAYS.—OPENING OF THE LIVERPOOL AND MANCHESTER.—ITS FIRST LOCOMOTIVE.—COMPARISON OF TRAFFIC WITH THE ESTIMATES.—PERSONAL SKETCH OF GEORGE STEPHENSON.

WHILE the Manchester and Liverpool was thus in its incipient progress, various lines which were afterwards carried out, were attempted unsuccessfully. Many a survey of many a future line was then made under the auspices of far-sighted men, capable of foretelling the future power of the rail, which on calm calculation it was found either inexpedient to adopt, or for which the calls could not be raised. It was thus with the London and Birmingham, thus with the Northern, thus with the Great Western, thus with nearly every trunk line we now possess. A capital of £21,942,500 was demanded for railways in 1824-5, on which

£219,425 was actually paid; what became of the money it would be difficult now to say; though there cannot be a doubt that to the great mania of 1825 England is indebted for her railway system. Amid the many schemes which Mr. Canning described as "springing up after the dawn of the morning, and passing away before the dews of the evening descended," the railway has been forgotten in the delusions which surrounded them. But there was a very general feeling in favour of the companies which have since been so popular. A great number of lines were prepared to go before the House; several ventured, but were thrown out; a large amount of capital was raised upon them; and nearly all the principal routes which are now occupied by railways were, during that memorable year, proposed and pressed on the public attention. It was the misfortune of some, that persons known in the city to possess darkened reputations, were connected with them, and there was, therefore, no chance for these. The writer is prepared to assert, on an authority which cannot be gainsaid, that many of the merchants and bankers of London were not backward in the matter. But

they commenced cautiously; before they gave their money, they gave their time; and for a considerable period, men whose names would have been an assurance of the honour of any company, entered into close calculations of chances, collected information of traffic, estimated expenses and receipts, and did all which wise men should do before they join societies, the failure of which, if trifling to them, is ruinous to others. The result was that, unable to foresee the fact that railways create trade; seeing, too, that there was not sufficient traffic existing to sanction them, they abandoned the proposition, and returned the deposits. It must also be remembered, that in that fierce and fatal crisis which followed, when bankers suspended their payments hourly, when merchants followed their example, when bullion was scarce and coin a novelty, when the bank begged a customer to postpone presenting his notes, when its governor scarcely saw his home for a week, when terror and confusion reigned paramount, and England was within twenty-four hours of barter, there was no chance of collecting deposits, no hope of carrying on projects, no time to think of railroads or of locomotives. A sketch,

therefore, of one of these railroads, will represent the progress of many.

In 1824 the Kentish railway was proposed, not as one of the bubbles so finely described by Mr. Canning, but as an actual endeavour to apply the force of steam to the iron way. The names in its introduction bore the stamp of respectability; the manner of its treatment was sound. The prospectus appealed to no violent feeling; it stirred no strong passion. It was worthy the directors whose names were on its surface. "The application of steam to locomotive and stationary machines, for the conveyance of passengers and goods, will give a new and extraordinary impulse to the industry of this country. Reducing the cost of transporting and exchanging commodities, has an effect upon agriculture and manufactures, precisely analagous to that which would be produced by improving the quality of the soil, or increasing the skill and energy of the workmen. * * * The cheap and rapid communication about to be established will give an incalculable impulse to the prosperity of Kent, and confer the most important advantages on all its inhabitants; every article which they do not

produce, they will be able to sell more advantageously. Their home trade with London, their foreign trade with France, especially in fruit, fish, and game, and all perishable articles, will be simultaneous."

This company was abandoned, not because the shares were unapplied for, not because the scrip came out at a discount, nor because railways were deemed impracticable, but because some of the gentlemen in the direction, applied themselves personally and patiently to investigate the project, and because these gentlemen, many of whom bore names greatly honoured in the city, imagined that the immediate prospects of such a line were insufficient to warrant their involving a numerous proprietary; that the idea, though just, was then in advance of the period, although with time it would afford a fine field for enterprise. The line alluded to would have occupied nearly the same ground as the present North-Kent, which, with all the unnecessary expense it has incurred, is understood to pay well; and the proposition of this line in 1824 was as honourable to the foresight as its abandonment was honourable to the principle of its directors. Another cause is

also said to have operated. Mr. Peter Moore was one of the directors, and Mr. Moore—who was connected with half the companies of 1825, declaring them all to be as safe as the Bank—was of opinion that his services as director should be liberally remunerated. The late Sir Charles Price, and others of the directorate, did not agree with the gentleman, and this tended to abolish the company.*

The following list will confirm the writer's assertion that the first railroad era was 1825.

Liverpool and Mancherter Railway
London, Rochester, and Shoreham, do.
Birmingham and Liverpool, do.
Bristol and Bath, do.
London and Birmingham, do.
London and Bristol, do.
London and Northern, do.
London, Portsmouth, and Southampton Railway
Manchester and Leeds, do.
Manchester and Bolton, do.
Limerick and Waterford, do.
Newcastle and Carlisle, do.
Garnkirk and Glasgow, do.

* In the early history of the railway world, the Croydon, Merstham, and Godstone company was a curious exponent of railway failure. The names on the direction were bankers, baronets, and members of Parliament. The prospectus, like all other prospectuses, spoke confidently of profit. The estimate of income was professed to have been most scrupulously examined. The committee were as confident as committees generally are, asserting that, at the very outset of the trade it would pay an ample interest on the capital, and that the returns would soon produce double the amount estimated. The shares were taken, £100 were paid up on each, and the reader may judge of their value when he is told that many years after (in 1836) the £100 share was valued at 30s., and that in the same year, forty shares which had cost originally £4,000, were absolutely sold for £60. Had this company, which was incorporated in 1801, proved successful, it is propable that England would have advanced much further than she has done in steam locomotion.

Edinburgh and Glasgow Railway
London and Brighton, do.
Grand Junction, do.
Taunton, do.
Norfolk, Suffolk, and Essex, do.
Leeds, Selby, and Hull, do.
London and South Wales, do.
Birmingham and Bristol, do.
Kentish, do.
Grand Western, do.
East London, do.
Canterbury and Whitstable, do.
Severn and Wye, do.
Stroud and Severn, do.
Hibernian, do.
Colchester and Halstead, do.
Ipswich, Diss, and Eye, do.
Exeter and Exmouth, do.
Cromford and High Peak, do.
Duffryn, Lynvi, and Porth Cawl, do.
London and Edinburgh, do.
London and Newcastle, do.
Maidstone and Tunbridge, do.
Manchester and Oldham Railway
Bolton and Leigh, do.
Rhymney, do.
Berwick and Kelso, do.
East Lothian, do.
Edinburgh and Dalkeith, do.
West Lothian, do.
Glasgow and Rosebank, do.
Kelso, Melrose, and Dalkeith, do.
Dundee and Strathmore, do.
Monkland and Kirkintilloch, do.
Galligate, do.
Tees and Weardale, do.
Kennet, Avon, and Old Sarum, do.
Dublin and Kingston, do.
Dublin and Belfast, do.
Brighton and Shoreham, do.
Wormsley, do.
Flintshire, do.
Portland, do.
Festiniog, do.
Huddersfield and Wakefield, do.
Redworth, do.

The 15th of September, 1830, will be memorable in the history of railways; on that day the Liverpool and Manchester was officially opened. By sunrise the people flocked to the parts where the best view could be obtained. Mr. Huskisson, who from the first had interested himself in this fine mechanical undertaking, and had declared that he deemed it his bounden duty to do so, was there. There, too, appeared the Duke of Wellington, destined in after times so greatly to influence their

fortune. Members of the senate were there; heads of old aristocratic houses also came to test the power they had not assisted. The engines with waving flags and bright colours, added to the scene, and curiosity was at its height when the carriages started; one portion on the down, and the other on the up line. Nothing could exceed the success of the undertaking, and all was pleasant until the arrival at Parkside, where the engines were stopped for a fresh supply of water. The company had been requested not to leave their carriages, and the caution was repeated in the printed directions. The advice was unfortunately misunderstood or disregarded. Most of the gentlemen in the "Northumbria," in which the directors and the more distinguished of the guests were placed, left the carriages when the train stopped, and unsuspicious of the extraordinary power which they were witnessing, gathered in groups on the line, mixing sociably together, in utter ignorance of the danger which menaced them. The alarm suddenly arose that the "Rocket" engine was rapidly approaching, and the various groups dispersed to places of safety. Some sheltered themselves beneath the embankment;

others forced their way into the carriages; confusion was paramount amid all. Mr. Huskisson only hesitated in his course; and instead of seeking shelter where others had done, hurried to the "Northumbria," grasped the door of the train, and attempted to enter. The door swung back, the statesman fell to the ground, the engine swept on with fearful velocity, and the representative of Liverpool was practically a dead man. "God bless you all! Now let me die at once!" were his words when he had kissed, and bade farewell to his wife; and his prayer was not long delayed. His remains were placed in the cemetery of the town for which he was member, and a marble pillar to his memory may be seen near the spot which witnessed the doom of our first free-trade minister.

Such was the tragedy which darkened the opening of this railway; and the tribute paid at its accomplishment by Lord Brougham is so eloquent a contradiction to some of his later vituperations of the iron road, that the writer is tempted to present it below.* On the 4th December, 1830, the first

* When I saw the difficulties of space and time as it were overcome; when I beheld a kind of miracle exhibited before my astonished eyes; when I surveyed

locomotive engine bearing merchandise passed along the line from Liverpool to Manchester, and the contents form an interesting specimen of the traffic between the two towns. The train consisted of eighteen waggons, containing one hundred and thirty-five bags and bales of American cotton, two hundred barrels of flour, sixty-three sacks of oatmeal, and thirty-four sacks of malt, weighing altogether fifty-one tons, eleven hundred weight, one quarter. To this must be added the weight of the waggons and oil cloths, *viz.*, twenty-three tons, eight hundred-weight, three quarters; the tender, water, and fuel

mosses pierced through, on which it was before hardly possible for man or beast to plant the sole of the foot, now covered with a road, and bearing heavy waggons, laden not only with innumerable passengers but with merchandise of the largest bulk, and heaviest weight; when I saw valleys made practicable by the bridges of ample height and length which spanned them; saw the steam railway traversing the surface of the water at a distance of sixty or seventy feet perpendicular height; saw the rocks excavated and the gigantic power of man penetrating through miles of the solid mass, and gaining a great, a lasting, an almost perennial conquest over the power of nature by his skill and industry; when I contemplated all this, was it possible for me to avoid the reflection which crowded into my mind—not in praise of man's great success, not in admiration of the genius and perseverance he had displayed, or even of the courage he had shown in setting himself against the obstacles that matter opposed to his course—no! but the melancholy reflection that all these prodigious efforts of the human race, so fruitful of praise, but so much more fruitful of lasting blessings to mankind, have forced a tear from my eye, by that unhappy casualty which deprived me of a friend and you of a representative.

four tons; and of fifteen persons upon the train, one ton; making a total weight of eighty tons, exclusive of the engine, which, "under the disadvantage of an adverse wind, was carried in two hours and fifty-four minutes."

The report from the directors which followed the opening of the rail was one continued swell of triumph. Within fourteen days the passengers amounted to eight hundred a day, and immediately after to one thousand two hundred. The journey, instead of occupying two hours, was done in one hour and a half; "and thus in a few months was produced a new and effective system of intercommunication, highly important to the interests of a mercantile community, and so extraordinary and complete as to form an era in national improvements, and an epoch in mechanical science." "The company have not been required to wait for gradual and partial transition." Out of 130,000 passengers only two trifling accidents had occurred. The increase of the merchandise traffic had been gradual and satisfactory. In four months it had quadrupled; from 1,432 tons, it had increased to 5,104 tons. The winter which followed was one of marked

severity: but it was triumphantly said, "on no one day were the goods trains prevented from passing, or the coach trains diminished." A bill was again introduced to raise £865,000 by the creation of new shares, and it was added "the directors have great satisfaction in being enabled to recommend to the proprietors a dividend at the rate of £8 per cent. per annum." The calculations of the originators as to the receipts on various items, were singularly erroneous in some cases, and singularly successful in others. The gross receipts of merchandise were estimated at £50,000; and so close was the calculation that they were within £2,960 18*s.* 5*d.*: being that sum above the estimate. The coal carriage was expected to realise £20,000; it only produced £910 16*s.* 9*d.* On the other hand the passenger traffic was greatly underrated: instead of £10,000 from this source, £101,829 12*s.* 5*d.* was received. The bridge over the Irwell was not included in the first statement, nor was any allowance made for building waggons, carriages, or warehouses; for accidents, or for the wear and tear of material. No sum was estimated for the purchase of houses and land, under which the tunnel passed. Only

£39,574 were allowed for contingencies, one of which consumed the entire amount. The original estimate was £400,000, the cost was £800,000 : carriages and warehouses increased this sum to £1,000,000. The net income of the line was expected to be £62,500, it proved to be upwards of £83,000; £510,000 was considered sufficient to complete the works entirely; the cost arose ultimately to nearly £1,200,000. The expenses were calculated at thirty-three per cent.; they amounted to sixty-two per cent.

The revenue derived from passengers was double that from merchandise. The distance by the newly formed line was thirty-one miles, performed in one hour and a half. The fare at the opening was 7*s.*, but was soon reduced to 4*s.* Only one passenger out of the first 700,000 was killed, and this death was entirely owing to the rashness of the sufferer. £4,000 were contributed to the parish rates. Not only cotton, but sugar, with many other articles of consumption for the poor, were carried at a cheaper amount. Goods placed in the railway at Manchester in the afternoon were shipped from Liverpool for America in the evening. The £100 shares soon

rose to £200, although many causes conspired to keep down the profits. Constant improvements were made in the locomotives, constant alterations were suggested, defects were remedied, old engines were abandoned for new ones of a superior construction, magnitude and form were both changed, nor was anything omitted which could possibly support the character of the line, increase the comfort of the passengers, or maintain their safety. Nothing, however, could prevent evil or idle reports. It was confidently stated—and the remark of Mr. Huskisson in the house had justified the notion—that the company could not divide more than ten per cent., the fact being that when the profits amounted to more the public were to divide with the proprietors. Accidents were wilfully exaggerated: if a passenger injured himself because he would leap from a train in full motion, it was changed by report into an upsetting of the carriages; and when money was wanted to establish a carrying department, and an attempt was made to raise 5,000 quarter shares, the reports of the disaffected and disappointed lowered the premium on the shares a hundred and twenty per cent. With

the following sketch of their increased passenger traffic the writer concludes his history of the first line. In 1832 the number was upwards of 356,000; in 1833 it was augmented by 30,000; in 1834 an additional 50,000 was the result; and in 1835 the number that travelled amounted to more than 473,000, being an increase in four years of 117,000.

The form of George Stephenson, its engineer, rises so naturally to the imagination, in connexion with this line, that a sketch of his career must not be omitted here, even at the risk of anticipating portions of railway history.

Born in a small cottage in Newcastle, and dying owner of the fine estate of Tapton; commencing life on a coal-heap, and ending it in a mansion; mending the peasants' clocks to pay for his son's schooling, and living to see that son a senator; dining in his youth in the mine of Killingworth, and amusing his age in a horticultural contest with a duke; taught arithmetic at four-pence a week, and planning the most difficult railways in the kingdom; consulted by the premier, receiving honour from kings, a kind son, a faithful friend, and a loving father, the name of George Stephenson is one to which all men delight in doing

homage. His life was a lesson to the world. Dragged, not brought up, as Charles Lamb expresses it, he early learned to gain his bread. He worked when other children played. "He led the horse at the plough," it was graphically said, "when too young to stride across the furrow;" he picked the dross from the coal heap; and so alive was the child to the importance of the two-pence a-day he gained, that he hid himself when the overseer passed, lest he should be deemed too young for his occupation. Scarcely had he passed boyhood when he found employment on one of those tramways which he lived to make so general. At Killingworth, earning his shilling a day and thankful for it, was his apprenticeship served to mechanics; and when, skill and strength increasing, he gained double that sum, and joyously told a comrade he was a man for life, it argues the narrow boundary of his early notions.

He married early, and his only son, the future member for Whitby, was the fruit of this marriage. He had no other child, and on this was the love of his strong mind concentrated. Feeling the absence of education personally, he determined that want at least should not be transmitted to his son; and

he who worked when others slept to pay for a son's schooling, was the man to love and respect. Deeply lamenting his own want of lore, he endeavoured to remedy it. He was never idle. He cut out the pitmen's clothes, he taught the pitmen's wives, he made shoes and gave them to his poorer kinsmen: and when it is remembered that a daily labourer's wages are earned by the sweat of his brow, and that George Stephenson was early and late at work, it will be seen that he was one to make his way in the world. Here, accordingly, he acquired a name which enabled him to quit the close work of the stoker for something more akin to that power which has done so much for England.

In the early life of Stephenson the working man had little to hope. There were war prices and war profits for the farmer, but in these the hewer of wood and drawer of water had no share. Provisions were fearfully high—wheat was at one hundred and sixteen shillings a quarter; labour was depressed; the labouring man was unrepresented; the poors' rates rose to four millions, with a population of nine millions; the legislature was only employed in taxing; the social questions of 1850 were disre-

garded in 1800; the worker had not even hope, and Stephenson, like many of the class to which he belonged, thought seriously of seeking the New World, of carving out a new fortune, of sitting under his own porch, of becoming a landed proprietor, of working for himself and not for a master. These were the dreams which filled his imaginative brain. But like others he felt that emigration was a fatal step; like others, too, he clung to the soil on which he first trod; and as he passed from his daily labour to his evening rest, it is said he wept when he approached his home at the thought that he soon might leave it.

It was about this time that his fine mechanical power was first developed. He effected some improvement in a condensing machine. He became known in the neighbourhood; he made two or three engines do the work of a hundred horses; he won the faith of those who trusted him; and he felt, perhaps, that his power was more likely to be recognised in England, where capital was plentiful, than in America, where money was scarce.

By 1813 it is impossible to doubt that Mr. Stephenson had made a local fame. There are a

thousand objects to which a scientific man can turn his attention: small things often evince as much ingenuity as great, and traditional stories are extant which show that even then he could accomplish much which was impossible to others. And when it is remembered that by the above year he had attained the important post of engine overlooker at Killingworth, and in this position was so highly appreciated that he was advanced capital to form a locomotive for the colliery he served, it is an evidence of the estimation in which he was held.

The friends of Mr. Stephenson have claimed for him the discovery of a safety lamp the honour of which is now exclusively given to Davy; but this is not the place to enter into the discussion which arose. The fame of Stephenson cannot be greater than it is; the invention of a thousand such would not heighten it. The man who could conceive a locomotive could surely conceive a lamp; and the claim itself is only of importance because it proves the position he had assumed. It was much to Stephenson to enter the lists with a Davy; it was something even to be beaten by the future president of the Royal Society: but to have a large

and influential section of scientific men supporting him, to be able to postpone a meeting called to do homage to his opponent, to have a motion openly made whether Davy or Stephenson were really entitled to the honour, speaks trumpet-tongued in favour of the young mechanical genius. A paper war, which occurred on the subject, was as unsatisfactory as such warfares ever are, and the only pleasant result was when Mr. Stephenson, invited to a public dinner in 1818, received as a tribute a silver tankard and a thousand guineas.

At forty years of age, then a mature, well-informed man, George Stephenson began his first important work, being at this period called on by Mr. Pease to assist in constructing the Railway called the Stockton and Darlington; and it is honourable to both that, in return for the care he bestowed on their interests, the proprietors lent him money to commence some locomotive works. To this manufactory, now known as that of Robert Stephenson and Co., may his fine fortunes be traced; and the same year which saw him his own master saw him also engineer to the Liverpool and Manchester railway. From this period his name is blended

with the tramroad; it is part and parcel of the locomotive: by 1824 he had made sixteen of them; and when Mr. Brunel conceived the notion of the broad gauge, Stephenson showed a littleness of feeling which is recorded with pain. He was to some extent jealous. The locomotive was the offspring of his own brain—the creature of his own cunning, wrought by his own right hand, the produce of his own skill; and when Mr. Brunel threatened to interfere with it, when he changed the gauge and altered its character, Mr. Stephenson waxed wroth. It was touching the apple of his eye, and he resented it proportionately. No one can justify his intense dislike to the broad gauge, or his hatred of the atmospheric. He called the latter, and he thought the former, "the greatest humbug in the world." But a kindlier feeling would have bade him remember that this expressive term had been often applied to himself and to the produce of his own thought; and that it would be better to help than to thwart one who, if not his equal, had no other superior. The cause may be found in the fact that Stephenson and his pupils having been paramount in three-fourths of the rail-

ways of England, hungered after the remainder; and when Mr. Brunel incautiously vaunted a hundred miles an hour, it excited a feeling which Mr. Stephenson never lost. With the faith of a great mind in those powers which had never deceived him, regarding other persons' schemes with supineness, if not with suspicion, his temper mastered his judgment. Lord of the locomotive, it was his cherished idol, and woe to those who did not bend in its worship. Objections have been urged against his lack of courtesy; but due allowance must be made for persons in the position of Mr. Stephenson and of his son, if found wanting in that kindness which should be the mark and heritage of genius. Their minds absorbed, their train of thought broken by some unfortunate intruder, worried by speculators who only propose what has been proposed a hundred times before, applied to by writers, intruded upon by theorists, and the target for projectors, their time and their attention are often unnecessarily lost.

These evils the subject of this sketch must have felt; and if he told the friend of one who aimed at achieving that which Mr. Stephenson

thought impossible, "not to leave him by himself, but to get some one to take care of him;" or if he lost his temper at the notion of a locomotive on a common road, be it remembered that to a poor man he gave advice, refused remuneration, and sent a generous letter to the press in support of his invention. Like other people, he must be taken as we find him. If, with strong powers, he lacked great patience; if he sometimes overstepped the bounds of propriety, and violated the decorum due to the society with which he associated; if he were coarse enough to tell an ancient enemy that he was "the best fellow in the world to tell a lie and stick to it," it must be borne in memory that there are injuries which some minds can never forgive, and that the person to whom he said this had been a fierce and dangerous opponent when Mr. Stephenson's strength was not sufficient to produce magnanimity.

His name became synonymous with success. He shared with Mr. Hudson the growing glories of the rail. His assistance sent shares to a premium. The jobbers of the Stock Exchange thought little of a line without it. In public he was worshipped;

in private he was beloved. Shrewd in his conversation, but simple in his habits, this single-minded man might have been met seeking nuts and nests, and enjoying the wild melody of birds. His vines and his melons were dear to him, and he tried, by the aid of science, to grow his pines as large as pumpkins. Careful of the moral and physical improvement of those he employed; ever impressing on the young the advantages of literature and science; liberal in assisting, not with his purse, but with employment; always pleased to offer advice and encouragement; he never forgot that he had once been a "swart slave of the mine," or that he earned his bread then by the sweat of his brow, as he afterwards earned it by that of his brain.

From 1840, when he left the locomotive business to his son, his life was a perpetual ovation. Premiers and princes honoured him. The Belgian monarch knighted him. The railway king did homage to him. The painter gave life to his shrewd, sarcastic brow. The sculptor carved him in enduring marble. Scientific men acknowledged his power. Commercial men were proud of him. He was on social terms with the most princely spirit in England,

telling his grace, in homely, intimate language, that when he went to Paradise he would not be better off than at Chatsworth; and it was in an injudicious rivalry with the owner of the latter that he lost his life; for the spirit of superiority was strong in this gifted man, and that which others could do at all, he rightly thought he could do better. He fell in the fullness of health and strength. Struck down by fever, he lingered but a few days, and died on 12th August, 1848, at the age of sixty-eight.

It is difficult to describe the feeling of those to whom he had endeared himself: his death was regarded as a national loss. Innumerable honours followed him to his grave: the mourning border on the newspaper; the public tribute on the platform; the private sympathy by the fireside; were alike given him. The marble statue; the life-like engraving; the eulogium at the railway meeting; the polished periods of Mr. Glyn; the unstudied oration of Mr. Hudson, were all his. It was felt that a bright light had gone out; that a great spirit had passed to its rest; that it would be long before the dark colliery and the humble cottage would yield his

fellow. It was felt that though his pupils might carry out his plans and inherit all of his knowledge which could be transmitted, yet between them and him "there was a great gulf fixed." It was bitterly felt, too, that the inheritance of genius could not be bequeathed, and that a genius of the purest water had departed in George Stephenson, fondly and affectionately termed the founder and the father of the railway system.

The journals of the day, and the press generally, delighted to eulogise him; nor will a few extracts be improperly employed to conclude the record of the man they praised.

"We apprehend," says the *Westminster Review*, "that George Stephenson is perfectly aware of the value and uses of money; but no mere pecuniary interest could have led him to persevere in his onward course from boyhood; when he toiled as a slave to the great steam-engine of the mine, up to the period when he had forced his way through all the difficulties, natural and artificial, of the Manchester and Liverpool, and ridden his ponderous fire-steed with arrowy swiftness over that very Chat-moss whereon a natural horse could not find foothold.

No calculation of per centages and dividends wrought this work. It was the high, heroic soul, the strong English spirit, the magnificent will, the indomitable energy, breaking forth, to win a world from chaos."

"His mechanical genius," said another, "was of that order that it may without exaggeration be asserted that, if Watt had not previously invented the steam-engine, he was capable of achieving it. Others before him had prepared the way, others since have contributed valuable improvements in detail; but to George Stephenson unquestionably belongs the proud title of the author of the railway system. He gathered the many threads of ingenuity and enterprise, and weaved them into the wide-spreading network which promises in its manifold extension to envelope the whole world in bonds of commerce, civilisation, and peace."

"Tracing the progress of railways," said a minute of the London and North-Western directors, "they found Mr. Stephenson foremost in urging forward the great railway movement; earning and maintaining his title to be considered, before any other man, the author of that universal system of locomotion which has effected such mighty results through-

out the civilised world." And in allusion to a statue which had been ordered, it was gracefully added, "they did not anticipate that on the completion of this work of art the great original would be no more; that they should be constrained to accept the marble effigy of the engineer in lieu of the living presence of the man."

"In private life," said the *Athenæum*, "he earned the regard of all who appreciate worth and liberality. * * * His affections were warm, his manners pleasant and vivacious, bearing that stamp of originality indicative of the man."

"On the death of a great man," said a beautiful article in the *Civil Engineer*, to which the writer is much indebted, "it is a good time to think of what he has done. We are struck by the loss; the thought comes gloomily that he who so lately stood among us, whose smile still beams upon us, whose sayings are fresh in our ears, and whose looks have not faded from our sight, has ended his days here, and sought another world. * * * He has given the engineers of England an European name; he has opened for them a new field of employment at home, a wider field of honour and wealth abroad, and they owe him heartfelt thanks."

The directors of the Midland railway declared "he had left a memory that princes might be proud of, and that the most distinguished man living would be glad to exchange his fame for that which would surround the name of George Stephenson."

Mr. Hudson said, "His departure was a national calamity. He was a benefactor of his species. He had benefited the poor as well as the rich."

This was a part only of the praise which followed him to his last resting-place. In a book like the present, it is delightful to dwell on such a man and such a memory; to think that he who did so much for commerce did as much for humanity; and to remember that the greatest of all projectors, the projector of the locomotive, died in the fulness of years, and escaped the fate which has darkened the lot of so many.

CHAPTER VII.

LONDON AND BIRMINGHAM RAILWAY.—ITS SURVEY.—ITS DIFFICULTIES.—INCREASE OF COMMERCE.—BUSINESS LOST FOR WANT OF A RAILWAY.—THE ADVANTAGES OF THE RAILWAY.—ITS ESTIMATE OF COST AND EXPENSES.—PROGRESS OF OPINION.—CONTINUED OPPOSITION.—OLD AND NEW MERCANTILE HOUSES.—LIST OF DIRECTORS.—ITS CHARACTER.—REJECTION OF THE BILL.—ITS EFFECT ON THE PUBLIC.—ENDEAVOURS TO REMEDY IT.—THE MODE IN WHICH THE LAND-OWNERS' OPPOSITION WAS NEUTRALISED.—POPULAR DISLIKE TO TUNNELS.—OPENING OF THE LINE.—PERSONAL SKETCH OF ROBERT STEPHENSON.—MR. CREED.—THE GRAND JUNCTION.—PERSONAL SKETCH OF THOMAS BRASSEY.

FROM 1825 to 1830 the railway, with the entire commercial interest, was depressed. The languor which followed the great panic remained; money was by no means plentiful: men watched with curiosity, mingled with contempt, the movements of the Manchester and Liverpool line, nor was it until the locomotive proved its power at Rainhill that much more than curiosity was excited. In 1829 an act was passed for the Newcastle and Car-

lisle railway, the distance between the two places being sixty-one miles; and so many were its difficulties that it was not opened throughout for ten years. Following this act came a desire to form trunk railways from the metropolis. One of these, the London and Birmingham, now known as the London and North-Western, though first thought of and surveyed during that great excitement in 1825, of which its elder brother, the Liverpool and Manchester, was born, was abandoned when the panic followed that excitement, not because it was impracticable, but because it was considered that, with the existing traffic, there was not a sufficient prospect of profit. In 1830 the project was again placed before the public view, and all eyes fixed on the great experiment which they of Liverpool and Manchester had tried; the time was propitious. Unfortunately rival lines were proposed. One of these was under the auspices of Sir John Rennie, the other under those of Mr. Giles. The former was to pass the collegiate town of Oxford, the latter by that place renowned for the exploits of the fair Godiva. The merits of these plans were discussed with due plausibility: each projector endeavoured

to demonstrate that there was no scheme like his own. Each engineer sought to prove that there was no route so proper as that which he proposed. If one line were difficult and expensive, it had the merit of promising a proportionate traffic. If the other went through less populous districts, it would create traffic and increase population. Directors and engineers, solicitors and secretaries, entered warmly into the warfare, and every prospect appeared of a social strife similar to that which disgraced the city at a later period. Fortunately all concerned saw the propriety of amalgamating. Proposals were made to join the two companies; and, fearful in that early stage of the railway interest lest they should damage themselves without injuring their opponents, an union was effected. The next question that arose was the line to be adopted. Mr. George Stephenson was called on to adjudicate on the merits of the rival routes; the directors agreed to select the line which the majority should approve; and as Mr. Stephenson decided in favour of that by Coventry, the gentlemen of Lancashire, who in this as in most other railways were personally and pecuniarily interested, supported their favourite's opinion, and

decided by their support that the line through Coventry should be that chosen by the united company.

Mr. Stephenson and his son were appointed engineers, and by September the companies were formally united. Thus early did the directors of this fine property evince their wisdom. During the period devoted to negociations, great but unobtrusive efforts had been made to model public opinion, and to produce a general feeling in favour of the line. It was known that opposition must ensue; that there would be the outcry of the selfish, and the demand of the unjust; that the weak would assert a power which would be better softened than irritated; and that the strong would open a contest which must be met on expedient and not on fair grounds. In addition to this, the public were far from enlightened on the subject of railroads. They heard of the success of the old line, but did not apply its chances to the new; urging all the ancient objections, and stirring all the old opposition, regardless that the former had been answered a hundred fold, and that the latter was only formidable in proportion to its landed strength. To obviate

this difficulty the press was unsparingly employed, the public mind was prepared for another adoption of the new power, and a committee appointed to establish a communication with the engineers.

Every possible exertion was made to forward the undertaking; the necessary documents were ready by November 1830; but so great had been the haste, and so unsatisfactory was the result to the engineers, that it was deemed judicious to postpone the application for a bill until the following year. In November, 1831, therefore, plans and sections, marking the line almost as it now exists, were lodged with the proper authorities.

The first crude idea had been to form a single line of rail, the expense of which was calculated at £6,000 a mile. The capital was to be a million and a quarter, and the shares rose to £10 premium. A more matured thought suggested the necessity of a double line. This was determined on; but so little faith had commercial men in there being sufficient traffic to pay for the increased capital, that the shares soon descended to a discount. It would be idle now to argue upon the advantages of any line of railway, but it is nccessary to prove the

relative power, position, and traffic of the two places, to show that though the directors of the London and Birmingham railway were, with wit more sarcastic than sound, called a "patriotic party of speculators coming forward for their country's benefit," they had good reason for the faith which was in them. The connection of Birmingham with London was most important: the population of the former was extending with its business. Between 1751 and 1831 it had increased from 50,000 to 110,000. Its trade had more than proportionately improved. Its fine productions were celebrated all over the world. Its mechanical power was almost marvellous. The most trifling trinket and the most ponderous machine issued from its factories. In half a century one hundred and sixty-nine steam-engines had been erected. With all this the mode of carriage had not greatly enlarged. The shortest journey by canal—then the only mode of sending bulky articles—occupied three days. More than a thousand tons came weekly, and business was hourly lost for want of a more rapid communication. The beautiful city of Liege was beating us out of the markets in which we had long been paramount.

Increase of speed was necessary to compete with the foreign merchant; and the Birmingham manufacturer was gradually yielding the Italian, Spanish, and Portuguese business to the continental trader, who, procuring the raw material on the spot, could only be rivalled through the assistance of a railroad. Orders were daily refused because they could not be undertaken by specified dates. The canal transit was most objectionable—the goods being detained by the way, sometimes lost altogether, and at others rejected because they were not received by the appointed time. The goods for the Baltic were stopped by frost for the whole winter: entire trades had left the country and become only traditional, because the coach proprietors could not take articles of much weight. These were a few of the absolute evils which the railway proposed to rectify: nor were the directors backward in assertions connected with the future, which that future has more than ratified.

The time of travelling—such were the temptations held forth—would be reduced six hours, and the cost decreased in proportion. The wholesale dealer would be able to turn his capital oftener. The

cheapness of all articles would be increased by facilities of communication. Freight, which averaged from Birmingham to London, and from London back, 80*s.* a ton, would be greatly reduced. Money then scarcely returned in eighteen months would be returned in nine.

Coal mines,* valueless without a railway, could be worked to advantage with it. Provisions could be brought at cheap rates to and from the various towns through which the locomotive passed; and many a secluded village would find its property improved by the rail. But above all, it was asserted that there was a great struggle between this country and the continent in supplying manufactured articles, and that it was a question not of personal but of political advantage.

This reason, independently of the important fact, that the surplus capital of the country would be well and wisely employed in constructing roads which the population of the country would use, produced its effect on the commercial world. In January, 1832, the London and Birmingham railway issued its

* An inestimable blessing which the country owes to the rail is the reduction in the price of coal: the cost of which is one-third less, owing to the former monopoly of the coal-owners being broken.

first circular, and the following were the calculations:—

ESTIMATED EXPENSE.

Excavation, embankments and tunnels . .	£1,098,000
Masonry, including bridges, and walling in depôts	334,672
Rails, &c.	316,368
Ballasting and fencing	205,920
	£1,954,960
Ten per cent. for contingencies, including engineering, surveying, parliamentary conveyancing, and other law charges .	195,496
Land and compensation . . .	250,000
Total estimate	£2,400,456

ESTIMATED REVENUE.

Passengers	£331,272
Goods	339,830
	671,102

The gradual progress of opinion since the proposal for the Liverpool and Manchester railway was somewhat curious. Mr. Hardman Earle, who had been an avowed and strenuous opponent of that line, came himself forward to state that he had been mistaken, that no inconvenience was experienced from the train passing through his grounds; that the smoke was not offensive, that the noise was not troublesome,

and that the passage of the carriage was a pastime rather than a nuisance. Many of the farmers gave evidence that it would be a great benefit to them. Lords Derby and Sefton, who had also contested the first line, consented to the London and Birmingham. The Earl of Chesterfield, who had been one of the malcontents, followed the good example. Many who had opposed the railway because they thought it would annoy them, gave way when they discovered their error, and yielded their allegiance to the new power. Some agriculturists, who had vehemently declared it would ruin their property, discovered that property was increased in value, and withdrew from the contest; and some landowners, who had combatted it because it was to ruin the country, found that houses grew in the place of corn, and that ground rents more than compensated for grain.

This was the conduct of a few. But the ranks of the discontented are easily swelled; and when the new line was in progress, the old cries were not wanting to prove how evil it would be and how absurd the scheme. These opponents, blinded by ignorance and obstinacy, could not see that the produce of their land could be carried to remote districts;

that places which were deprived of pure dietary would pay liberally to procure it, or that millions spent in the employment of the poor would relieve them in their poors' rates. While some, therefore, had changed their opinion, and avowed that change, others formed themselves into an opposition which might almost be called organised; and the echoes of those "sweet voices" which had condemned the Liverpool and Manchester to destruction, were heard throughout the empire against the London and Birmingham.

It was said with great boldness and bitterness of spirit, that the new railway would be "a drug on the country;" that its "bridges and culverts would be antiquarian ruins;" that "it would not take tolls sufficient to keep it in repair;" that "the directors were making ducks and drakes of their money;" that "every hill and valley between the two towns would behold falling arches and ruined viaducts." It was said once more that game would cease to be, and that agricultural communication would be lost; that not a field existed but what would be split and divided; springs would be dried up, meadows become sterile, agricultural operations would be

suspended. Like an earthquake it would create chasms, it would upheave mountains; and it was pathetically added, the railway promoter was like an evil providence, unrighteously attempting that which nature was too kind to effect. Hundreds of innkeepers, and thousands of horses—that antique, ancient cry—would be thrown out of employment; while hundreds of thousands would be ruined for the benefit of the few. Labour for the poor would be lessened, the rates for the poor be increased. Canals would be destroyed; those who lived on them would be beggars; houses would be crushed by embankments, corn thrown out of cultivation, land made barren, landholders beggared. "Long before the London and Birmingham is ready," wrote one sapient expositor, "such are the improvements now making in canals, that not only may the charge be expected to be many times less than the railway, but the time will be considerably saved." "Our estates," said a second, with apt alliteration, "will not only be deteriorated, but destroyed. It is not a question of pounds, but a question of principle." The prospects of one peer were said to be blighted; the Countess of Bridgewater and Lord Brownlow declared that the

advantage to the public would not equal the injury to their estates; not only would it be a nuisance to the county, it would positively be a nuisance to my Lord Southampton. It was coolly asserted that no acceleration of speed was desirable, although in the same breath it was added that canals were increasing their rapidity of transit; and, with a boldness worthy the old English gentleman, their objections were said to be not on personal, but on public grounds: while the general ignorance may be estimated from the fact that, though the Liverpool and Manchester railway had been running some time, one of the parliamentary committee innocently exclaimed, "Why, you don't imagine they will leave in the dark?" The survey was violently opposed. Dark lanthorns were employed to do that which could not be done by the light of day. The grounds of one reverend gentleman were surveyed while occupied in his Sabbath duties. Artifice was used to counteract force, and had it not been for the ingenuity of the engineers, the line would never have been finished. Extortionate demands were made; advantages were taken of every trifling want. £3,000 was given for a piece of land, with £10,000 for consequential damages, although

its value was increased twenty per cent. One man who had demanded four bridges, found out when the agreement was signed, that half the money they would cost the company would be more serviceable to him than the bridges, and proposed a compromise which the directors accepted.

Probably few private bills ever sustained so much combined opposition. Those whose purses were interested, refused to be convinced; those whose prejudices were attacked, would not listen to the voice of reason.

Meeting after meeting was held to counteract this. Reports and circulars were issued to neutralise the efforts of its opponents. It bore the appearance of a great national undertaking.

It must not be forgotten that signal difficulties, irrespective, perhaps, of the object for which the capital was demanded, beset the directors of the company. Twenty years ago, when this railway was in progress, the commercial houses of London were principally of that class which could claim ancestral honours. Their fathers had fought for commercial rights, and been graced with commercial dignities. They had been honoured with titles,

they had founded great charities, they had ever been ready to aid an impoverished state with their capital, they had often been called on to assist a falling ministry with their counsel. By 1830, the position of these houses was beginning to change. The fearful crisis of 1825 had ruined some, and weakened more. Many who had stood the crash had been severely shaken, and unwilling at a future time to run a similar hazard, they had withdrawn their capital from their narrowed business, and remained in dignified isolation. In addition to this, a new race of traders had arisen to push them from their stools. Such men made up for a small capital by great activity. Hitherto the old houses had been paramount in their business, and peremptory in their mode of conducting it. They had fixed their own terms in the old times, and they refused to change them in the new. They could scarcely be said to have sought their profits, so easily had those profits fallen to them. They rarely ventured on anything novel, and the utmost stretch of speculation was when some young adventurous member of the firm startled his seniors by sending a courier to Vienna to take advantage of

the exchanges, or an *estafette* to St. Petersburg to forestall the tallow-market.

The "new men" saw at once the position of these houses, and the prospect which opened to their own ambition. They introduced that mode of dealing for time which had its origin in the Stock Exchange, and which the writer has elsewhere had occasion to moot. They bought and sold for delivery, paying or receiving the difference. They lowered the rates of commission, they relaxed the dignified terms maintained by their competitors. They were the type of that earnest, progressive spirit which for good or for ill has increased for the last twenty years. They were emphatically the men of the time; they carried that competitive spirit into the higher branches of commerce which had long been in existence in the lower orders of trade.

The consequence was so far as the railway is concerned, that while the old commercial houses rejoiced in placing their sons in the directorates of insurance companies, engrossed the shares in the New River company, or gave their imperial sanction to the gas corporations, they were too determined to support their order at once to recognise the new

and mighty power which silently, but surely, was abolishing all that they regarded as sacred. They feared at once to involve their character and their capital, and for a short time they held aloof.

If the old houses wanted the will, the new houses wanted the power. Every shilling of their funds was employed in what they were pleased to call legitimate speculation. Independently of this, they were not desirable men. They had no traditional names which spoke at once for the respectability of the company. They possessed no character to charm the multitude; and they could not dispose of the shares. They could not influence the senate; they were, therefore, worthless to the railway promoter.

The London merchants had doubted the practicability of the iron way; they had derided the notion of the locomotive; they had scarcely even adventured in the shares. Contenting themselves with watching its progress, they were ready to rejoice in their prudence, or to benefit by its success. When, therefore, they were persuaded it would pay, they raised their voices in its favour as heartily as they would have denounced it had it failed.

Under these circumstances the following list,

representing much of the then solidity and capital of the London houses, is somewhat remarkable. The names are familiar to all commercial readers :—

George Pearkes Barclay	James Pearson
Edmond Calvert	William Phipson
William T. Copeland	John Lewis Prevost
Edward Cropper	Theodore W. Rathbone
James Foster	Henry Rowles
William Francis	Isaac Solly
Robert Garnett	Timothy Smith
George Carr Glyn	John Sturge
Pascoe Saint Leger Grenfell	Thomas Tooke
Daniel Ledsam	John Turner
Joseph Frederick Ledsam	Joseph Walker
John George Shaw Lefevre	Henry Warre.

From this it may be seen that in this list of the early directors of the London and Birmingham railway company, the merchant and the manufacturing interest had each its symbol. The names of George Carr Glyn, and Pascoe Saint Leger Grenfell, represented the banking interest of London ; that of Copeland gave a pledge that the class in which he stood prominent appreciated the power. The merchants of London sent members, in the persons of Barclay, Prevost, Tooke, and the name of the latter, since known as the exponent of a new principle in political economy, gave an additional sanction and

surety to the conduct of the company. The character of the gentlemen on that list of directors afforded evidence that if the provinces had taken the initiative in railways in 1825, the metropolis would not be backward in joining them with cash and credit in 1832. And yet it was composed of mixed materials. The country and the London banker was side by side with the provincial share-broker. The directors of some of our most ancient London corporations went hand in hand with the Birmingham manufacturer. The chairman of one of our oldest insurance companies did not disdain the companionship of the Cheapside factor; and to the honour of Robert Garnett, merchant, of Manchester, be it recorded that he was one of the largest contributors to this fine undertaking.

The course of proceedings in parliament was interesting. On the 20th February in the above year, the bill was read a first time in the commons. On the 28th it passed a second reading by a majority of seventy-nine. A rigorous examination of the evidence followed, and the bill was carried in the lower estate. No division occurred in the House of Lords on the first and second reading; and after the com-

mittee, of which Lord Wharncliffe was chairman, had sat for six days hearing conflicting evidence and reconciling conflicting statements, an adjournment was agreed to with the idea that some amicable arrangement might be effected between the company and its opponents. The negociation, however, failed; in other words, the directors could or would not bribe high enough: the opposition was stoutly maintained; and on the 10th July, 1832, the bill was lost.

A most indignant spirit was stirred throughout that important commercial interest which had joined the movement. It was felt that the house of peers had been moved by more aristocratic influences than those of trade. It was thought that a company which partook so completely of a monetary character, which proposed at its own risk to form a highway and to increase communication, should have been dealt with on catholic and not on sectarian grounds. It was felt that a bill which affected the acres of every farmer, and the comforts of every artisan, should have been treated on the broad basis of justice, and not on the narrow considerations of expediency. The wisdom of our highest

representative body should have taught such a lesson to those who would have crushed the company, as its own dignity demanded; and above all it should have remembered, with such a spirit of change in the people as marked the period, it would be wise to encourage that, in a beneficial movement, which might otherwise be turned to a destructive one. If ever the eyes of the people of England were on the House of Peers it was when, having failed in stopping the progress of reform, it lowered its character by rejecting the bill of the London and Birmingham railway company. The power which produced this unhappy result was fully known and appreciated. "There is no doubt," said Lord Wharncliffe, with honest indignation, "that to landowners the failure of this bill must be attributed." "Had the aristocracy assisted them?" asked Mr. Glyn, on a future occasion. "No! they had done all they could to keep the company back. Had the landed interest aided them? No! for they had tried to smother the company by the high price they demanded for their property." "The London and Birmingham," said another, "was thrown out of the House of Lords through the

influence of a single peer, because it would approach a mansion he did not occupy. The noble proprietor and his friends did not attend to hear the evidence, they came only to the division, and threw out the bill." The *Westminster Review* took a severe and stronger tone: "Why," said the writer earnestly, "why has not the land resounded with the indignation which the rejection of the Birmingham railway bill by the lords ought to have excited! * * * There is a blindness which will not see, and how can it be expected that they should be able to calculate whose schooling has gone little beyond counting the feet of an hexameter verse." Three days only elapsed before a meeting of peers and members of parliament, favourably disposed to the undertaking, was held at the Thatched House Tavern. Various resolutions were carried affirmative of the benefits of the line; and the country was plainly told that the plan was deferred but not abandoned, while the opponents saw that their efforts were temporarily not permanently successful.

Six months after the bill was thrown out, another circular was issued. That circular speaks as plainly as language can speak, the mean spirit of its oppo-

nents. In it the directors stated that they had no hesitation in proceeding with the bill, "provided they could remove that opposition of dissentient landowners and proprietors," which was the sole cause of their failure. They there distinctly avowed that they had adopted this plan with some, that the negociations with other "most influential parties" had only very recently been concluded; that "these measures had been successful to a greater extent than they had ventured to anticipate; and that the most active and formidable had been conciliated."

These things are written with pain, for they display a low tone of moral feeling in that class which by virtue of inheritance of birth and of blood should possess a high and chivalrous sense of honour. The writer is far from wishing to blame those who honestly opposed the rail. The conscientious feeling which prompts a man even in an unwise action, if mistaken, is at least respectable. There is much to palliate the honest opposition of the landowner. Scenes and spots which are replete with associations of great men and great deeds, cannot be pecuniarily paid for. Sites which bear memories more selfish, yet not less real, have no market value. Homes

in which boyhood, manhood, and age have been passed, carry recollections which are almost hallowed. Such places cannot be bought and sold: nor are the various prejudices which cling to the country to be overlooked. If the nobleman disliked the destruction of his fine old English park, the yeoman deplored the desecration of his homestead. The one bore its splendid remembrances, the other its affectionate recollections. If the peer hallowed the former for the sake of its royal visits, the farmer cherished the latter for the sake of those who had tilled the land before him. There are fancy spots in this our beautiful England which it would pain the most indifferent to destroy; what then must be the feelings of those who have lived and only wish to die there?

It is the trafficker in sympathies, it is the dealer in haunts and homes, at whom the finger of scorn should be pointed. It is the trader in touching recollections only to be soothed by gold that should be denounced. It is the peer who made the historic memories of his mansion a plea for replenishing an impoverished estate; it is the farmer who made the sacred associations of home an excuse for re-

ceiving treble its value; it is the country gentleman who made his opposition the lever by which he procured the money from the proprietor's pockets, who should be shamed: and a double portion of ignominy must rest upon these, when it is remembered that the money thus immorally obtained is a constant tax on the pleasures of the artizan, on the work of the manufacturer, and on the wages of the railway official.

Such was unhappily the case with those whom the directors of the London and Birmingham propitiated. They who professed to oppose the bill not on private but on public grounds; they with whom it was not a question of pounds, but a question of principle; they who had stood in the van of a popular opposition, and they who predicted with a feeling not equalled by their fear that the country would be ruined, and the farmer exiled, if the London and Birmingham line were carried out, changed their opinion at the instance of its directors, and formed an alliance with the speculators they had denounced.

"Nearly all those who were the most active and the most formidable," said the report, "have been conciliated, and the directors have the pleasure

to announce that their measures"—in other words their money—"have been successful;" and a most instructive commentary on the value of this conciliation is in the fact that the land which was over estimated at £250,000, cost three times the amount.

By these means the bill was passed; but though the directors, in the circular which followed, said it had met with little opposition, and at an expense of not more than half the amount incurred in the previous application to parliament, they did not also hesitate to assert the power which had been in operation, leaving their shareholders to mourn over their expenses.*

* "It is well known," says Sir Francis Head, "that one of the results of Mr. Robert Stephenson's elaborate investigation was that the London and Birmingham railway ought to pass through the healthy and handsome town of Northampton. The inhabitants, however, urged and excited by men of influence and education, opposed the blessing with such barbarous fury, that they succeeded in distorting the line *viâ* the Kilsby tunnel, to a point five miles off." The Kilsby tunnel is a specimen of engineering which tells with double force after the above relation. Let to a contractor for £99,000, a quicksand soon stopped his progress, and though the company relieved him from his engagement, the vexation killed him. Mr. Stephenson then undertook the task, and confronted the difficulty with a most inventive spirit. Though the water rose and covered the works, though the pumping apparatus appeared insufficient, though the directors were inclined to abandon the task, the engineer, by aid of their capital and his skill, with 1250 men, 200 horses, and 13 steam-engines, raised 1800 gallons of water per minute night and day, for eight months, from the quicksand alone, and infused into the workmen so much of his own energy, that when either of their com-

Another difficulty with which the company had to contend was a great dislike to tunnels. The public could not or would not understand that it was as safe to travel in a dark tunnel as on a dark night. It was said, too, that the chill of a two miles subterranean passage would deter any person of delicate health from ever entering them. Sir Antony Carlisle asserted that "tunnels would expose healthy people to cold, catarrhs, and consumption." "The deafening peal of thunder," said another medical man, more poetically than professionally, "the sudden immersion in gloom, and the clash of reverberated sounds in a confined space, combine to produce a momentary shudder, or idea of destruction, a thrill of annihilation." The "resounding echo," the "rattling wheels," the "panting, puffing engine," the "clanking chains," the "dismal glare of lamps," the "darkness made visible," were

rades were killed by their side, they merely threw the body out of sight, and forgot his death in their own exertions.

Three hundred thousand pounds was the cost of this great work. Thirty-six millions of bricks were used in its formation; 177,452 cubic yards of soil were taken from the tunnel in eight months; 286,480,000 gallons of water were pumped from it; and for all this the shareholders of the company are indebted to the "men of influence and education," who excited the people of "the healthy and handsome town of Northampton."

themes on which much more was prophecied than time has supported, and were arrayed in all the horrors which vivid imagination and alarmed pockets could suggest.

On the other hand it was replied that tunnels were better than the open air, being more uniform. That safety would be more insured in a tunnel than out of it, because more care would be taken. With much grace of diction it was said they ought rather to be called "lighted galleries;" while Dr. Paris and Dr. Walsh, Messrs. Lawrence and Lucas, together with Mr. Phillips, lecturer on chemistry, reported, after their visit made purposely under unfavourable circumstances, that "the air for many feet above their heads remained clear, and apparently unaffected by steam or effluvia of any kind, neither was there any damp or cold perceptible." They found—what no scientific or unscientific man has since discovered—that the atmosphere of the tunnel was "dry, of an agreeable temperature, and free from smell." That the danger incurred in passing through a properly constructed tunnel, would be no greater than that incurred upon an open railway or on a turnpike road, that apprehensions of such

tunnels proving detrimental to health or inconvenient to the feelings, were futile and groundless, adding, that the sensation was "like passing in a coach by night through a narrow street; that the sound was not greater than in the open air, and that the noise did not prevent easy conversation."

The public has long since decided that a tunnel is a necessary nuisance, and that when persons can avoid one, they avail themselves invariably of the opportunity. Besides the ordinary

> Troubles which environ
> The men who meddle with cold iron,

many incidental difficulties were experienced by the directors of this line. From the great and general increase in prices, seven contracts were thrown on the company's hands. They were obliged to forfeit some shares on which recreant proprietors refused to pay the calls. They quoted the seasons as against them. They partially changed their route, they wisely chose a terminus in town, and were compelled to apply to parliament for new powers. They found additional capital would be necessary, and in February, 1837, they announced that instead of £2,400,000, the expense would probably reach four and a-half mil-

lions. At length these various difficulties were surmounted; and on 17th September, 1838, the railway was opened the entire distance.

It has been said that George and Robert Stephenson were appointed engineers. A sketch of the former has been given; and in considering the latter, as well as other members of a profession to which the railway owes so much of its success; in glancing at all which they have promised, and all which they have done, astonishment cannot fail to be excited at the fine staff which has grown with the demand for engineers. In sketching, therefore, the career of Robert Stephenson, the gifted son of a most gifted father, the difference between inspiration and ingenuity forces itself on the notice and compels attention. It is as old as the hills that genius is no birthright, yet we see Robert Stephenson bearing honours akin to those of his father; the younger Brunel acquiring a name equal to that he inherited; and Locke, the favourite pupil of George Stephenson, performing tasks worthy the master of whom he learned. Other names also claim similar honour, and it is certain that no sooner had the country demanded a power to mark the course of railways,

and to form the gigantic works connected with them, than capable men arose. But they were created, not creators; and an exception must be taken when for these gentlemen the honours due to genius are demanded. It is certain that all history has no such record; and though there have been intellectual eras and Augustan ages in every kingdom, there has been no power passed from father to son, or from master to pupil. The scholars of a Michael Angelo could not rival the works of their teacher. Raphael, Rubens, or Correggio, left no immediate inheritors of their fame. The skill of a Chantrey and the inspiration of a Newton die with them. The genius of a Watt is not transmissible. A Bacon or a Brindley cannot bequeath their power. The poetic impulse of a Byron, and the genius of our own Sir Walter, have passed away. Napoleon lived not in his son. His great antagonist forms no exception, and these examples tend to prove that, whatever form genius may assume, it is rarely, if ever, transmitted. It seems, therefore, scarcely probable that the inspiration of George Stephenson should have passed to his son, or that the creative power of Mark Brunel should have

been inherited by the engineer of the Great Western. That Isambard Brunel and Robert Stephenson have achieved great works, in opposition to great obstacles, is undeniable; but the difference between their productions and those of their fathers, is almost the difference between mind and matter. When George Stephenson, unknown and untaught, wrestled with hazardous difficulties to introduce a great discovery, it was creative impulse: when Robert Stephenson, an engineer by the force of association, after much thought conceived the tubular bridge, it was a high order of design. When the elder Brunel devised the tunnel beneath the Thames, it was genius: when his son devised the broad gauge, it was a lower order of the inventive faculty. If the children of George Stephenson and Mark Brunel inherit the inspiration of their parents, and if the pupil of the former rival the works of his original, it follows that the scholar of a Robert Stephenson may equal the inventions of his master; or that genius in one long line of engineers may descend from an Isambard Brunel. This is in opposition to all we know, and it is more natural to believe that the names which adorn our age, obeying the laws of political economy,

have supplied the demand which their master created, continuing the work which their master commenced. This view is confirmed by the remembrance that when the simple-minded Brindley was the good genius of the Duke of Bridgewater, and canals became a fashion, men then arose with the demand, and engineers were not then wanting to form works for which capitalists could pay.

These remarks do not appear an unfitting introduction to the somewhat eventful career of Robert Stephenson; and little does the ordinary tourist think, as he passes his summer vacation in examining the manufactories of Liege, the chair of Charlemagne, or the tomb of the three kings, that to this gentleman, no less than to his father, he is indebted for the facility of passing in twelve hours from Ostend to Cologne; or that to their ability and foresight he owes that fine scheme of continental travel, which is familiar to most; and when with due dignity Mr. Stephenson rises in the House of Commons, as little do his brother legislators think that his great father mended the pitmen's watches and cleaned the neighbours' clocks in after hours,

to pay for the schooling his son received.* It is only in England that these strong lights and shades appear; and it is rare even in England that so much dignity of character is displayed, as when, fond and proud of his successor, George Stephenson related facts to which Robert Stephenson points with pride.

Born at Wilmington in 1803, sent to school in 1813, leaving it in 1819, to be apprenticed as coal-viewer to Mr. Nicholas Wood, with whom he served three years underground, Robert Stephenson was enabled by his father's growing fortunes to attend in 1821 the university of Edinburgh, at which there was no more diligent inquirer, and where, with every hour employed in suitable studies, it is said he acquired in one session as much as others learned in three; nor is it unworthy of remark that Mr. Stephenson believes his knowledge of chemistry to surpass his attainments in engineering.

In 1822 he joined his father's manufactory at Newcastle, where so close was his application and

* I was, however, a poor man, and how do you think I did? I betook myself to mending my neighbours' watches and clocks at night, after my day's work was done, and thus I got the means of bringing up my son.—*Speech at Newcastle.*

so intense his study, that although to external appearances his athletic frame seems capable of anything, his health failed beneath the labour.

The year 1824 was the era of gold mines, and in charge of an expedition from one of those companies which ruined so many, Mr. Robert Stephenson went to South America. With a fresh air and a new country, he soon recovered his health, performed his duties, employed his leisure time in studying various sciences; and in 1828, on his way home, met with that Mr. Trevithick, whose career has already been given, and from whom he received information concerning the steam-engines in Cornwall, which on his return he applied to the locomotive, and was one cause of their success. When in 1824 Robert Stephenson left England to explore the mines of Columbia, there were not many of these engines in existence; when he returned in 1828 the Liverpool and Manchester railroad was nearly finished, his father had become a great man, and his father's pupil was on the high road to fame and fortune. For the next few years, encouraged by the success of the "Rocket," he devoted himself with renewed earnestness to the locomotive.

He simplified its works, he increased its capacity, he varied its proportions, he experimentalised, until year after year witnessed an increased improvement and an increased power. He made the factory of which he had become a partner known in every civilised city of the old world; he supplied to the New World engines with which they could scarcely hope to compete; and he has manufactured nearly a thousand of those machines so familiar to the traveller.

The chief part of Mr. Stephenson's life has been passed in connexion with railways. He surveyed the line for the London and Birmingham; he undertook the entire controul of its works, until it was open to the public; and its success is patent to all the world.

From its commencement his name obtained a power which augmented with time. He was sought after by directors, he was longed for by scrip-holders; his assistance was regarded as an omen of good. It sent shares to a premium, and made rival lines hide their diminished heads. He is the hero of many a parliamentary battle; the conqueror in a hundred parliamentary fights. He stood foremost in the fray when the guage question was mooted.

He executed all the iron lines from London to Berwick; he united Yarmouth with Holyhead; he has been prominent in the formation of one thousand eight hundred miles of railway; and a mere list of all he has accomplished would fill a chapter. The largest stone viaduct in the world—that of the Tweed—with its million cubic feet of masonry and its two million and a-half of bricks, was contrived by him. The Chester and Holyhead railway, with its forty-four hundred yards of tunnel and its forty-five-arch viaduct, was the work of his brain; and though that which has truly been termed the crowning triumph of engineering—the Britannia tubular bridge—will be detailed at a future period, it may be added for the present to his list of achievements.

There is something striking in the career of this gentleman, who at the early age of forty-eight has made so fine a reputation and performed works "which Egypt and the ancients might have been proud of, but could never have executed." It seems difficult to reconcile him as one and the same person in the various phases of his life. It is scarcely possible to think of him "working for three years under

ground," as Mr. Nicholas Wood's apprentice, and then as a senator of the greatest legislative assembly in the world. It is painful to remember him as emphatically one of the people, and then to regard him opposing free trade and abetting a traditional conservatism. It is curious to think of him as taken away from college for pecuniary reasons, and then to see him rejecting honours proffered by his sovereign; it is equally remarkable to recollect him at the early age of twenty-two examining a South American mine, and a quarter of a century later receiving degrees from colleges, rewarded with orders and crosses by kings, planning railways for a republic through the Alps or forming lines for the successor of the noble Egyptian pacha. This, however, has been the career of one whose name will long be remembered in the annals of engineering.

The progress of railway statistics and railway calculations so far as regards expenses and traffic is exceedingly interesting. The various corporations and companies have been blamed for suggesting receipts which they could not possibly expect, and for promising dividends which they could not possibly

pay. The error into which they fell is common to all new undertakings; but if they understated their expenses, it is noticeable that they also underrated their receipts. Railways have produced results which the wildest prospectus never dared to exhibit. They have found sources of profit which the most vivid imagination never conceived. They have carried millions instead of thousands, and that at a rate so low as to compel traffic where none previously existed. They have created towns, erected manufactories, built churches, educated children, peopled villages, filled heaths with houses, given the poor man the luxuries of the rich, placed the wealthy on a level with the poor, enforced a punctuality which was before wanting, have taken the townsman from the smoke of the city, have given the yeoman a glimpse of the town paved with the gold of imagination, have shed a light and life over many a country village, and by the power of that great discovery for which Franklin was derided, which Wheatstone has developed, and which Cooke has applied, have made the uttermost parts of the land converse with the speed of light.

The boldest prospectus never spoke such language;

the most arrant enthusiast never imagined such things. But the first half of the nineteenth century has witnessed them, and the development of the second will in all probability surpass the first, provided peace be maintained in the land.

No one will wonder then, that though the passenger traffic of the London and Birmingham was only estimated at £331,272, it amounted to more than £500,000 the first year; that the goods traffic calculated at £339,830, scarcely reached £90,000; or that within twelve years from the opening it did not attain the large sum expected. These things are curious, but more so when it is remembered that the expenses were estimated by Mr. Stephenson at two and a-half millions, and it was his conviction if so large a sum should be exceeded, it would not pay the proprietary: while Mr. Rastrick, on the other hand, deemed it much too heavy. The expenses reached five and a-half millions, but the investment paid ten per cent.

The assertion that land and compensation on the line to which Mr. Robert Stephenson was engineer, which was estimated at £250,000 amounted to £750,000, appears to call for some additional remark; and the question which is now proposed, is, how

far the right is with the railroads to demand, and the passengers to pay an increased fare, in consequence of bargains which, unjust in principle, ought never to have been allowed? It is now a historic fact that every line in England has cost more than it ought. That in some, where, too, the directors were business men, large sums were improperly paid for land, for compensation, for consequential damages, for fancy prospects, and other unjust demands, under various names. These sums being immorally obtained, is it right that the public should pay the interest on them? Is it just that the working man should forego his trifling luxury to meet them? Is it fair that the artisan should be deprived of his occasional trip, or that the frequenter of the rail should pay an additional tax?

Other influences were at work to increase the capital stock. Law expenses swelled some bills, parliamentary opposition increased others, competing lines augmented the charges of a few, arrant jobbery was not wanting with many. It has been computed that sufficient money has been spent in unnecessary legal costs to form a direct line from one end of the country to another; and some notion can be

formed of the difference of law charges from the following. Assuming that the engineering and direction would vary considerably, still the difference is greatly attributable to the legal expenses :

LAW, ENGINEERING, AND DIRECTION.

London and South Western . . .	£ 900 per mile.
London and Birmingham . . .	£1,500 do.
London and Brighton	£1,800 do.
Great Western	£2,500 do.

Another specimen of opposition, be it remembered, too, causing increased fares, is to be found in the

PARLIAMENTARY EXPENSES.

London and South Western . . .	£ 650 per mile.
London and Birmingham . . .	£ 650 do.
Great Western	£1,000 do.
London and Brighton	£3,000 do.

The following statement completes a brief but painful sketch of how much the country has had to pay for the opposition which it is the endeavour of one part of this volume to display :

LAND AND COMPENSATION.

London and South Western . . .	£4,000 per mile.
London and Birmingham . . .	£6,300 do.
Great Western	£6,300 do.
Brighton	£8,000 do.

The entire expense per mile amounts in the case of

the London and Birmingham to £8,450, or about £4,500 more per mile than it should have cost. Thus £504,000 on the one hundred and twelve miles was spent through avarice and rapacity: ten per cent. interest on which was paid for years in the shape of dividend out of the pockets of many who could ill afford it. The question is worthy consideration.

The record of this line must not be concluded without mention of one whose services at its formation and whose aid during its progress were of essential value. Filling the office of secretary, the assistance of Richard Creed was of the first importance to the company; and when, in acknowledgment of this fact, the directors paid the personal tribute of placing him in their body, it was equally honourable to them as to him; while the mode in which it was done speaks loudly for the moral and the mental character of the men who did it. "On his honesty and integrity," said Mr. Glyn on one occasion, emphatically, "I pin my faith, and you may pin yours also!" "Co-operating as we have done with my valued friend for years and years, a co-operation of which I feel we ought as a body

to be proud, and from which I individually have received the greatest amount of assistance which one gentleman can receive from another, I have the satisfaction of knowing that co-operation is to be continued."*

Such were the remarks of one as competent to form an opinion as he is capable of paying a tribute; nor must it be forgotten that, when Mr. Creed by virtue of his position was placed over many subordinate officers, he produced the greatest benefit to the employer, with the least annoyance to the employed; that it was felt a privilege to associate with, and a pleasure to serve under him. He was always accessible, and ever considerate; and it is doubtful, when, in after times, the period of his elevation arrived, whether his loss was lamented or his rise was rejoiced in the most. His kind and genial spirit has produced an effect which will not soon be effaced, and, within the time, with any other secretary, it is uncertain whether the prosperity of the London and Birmingham railway would have been so signally developed.

* The testimonial to this gentleman, in 1844, was worthy the munificence of the givers. It is not often that a cheque for two thousand one hundred guineas accompanies an expression of opinion, or that the rich man's praise fructifies into a service of plate.

The Grand Junction railway deserves notice in connexion with the line just detailed. Petitioned for under a different name in 1824, and opposed by the usual interests, it failed in procuring its acts. In 1826 a similar result followed a second application; and when, in 1832, under its present title, a petition was once more presented, the opposition not being renewed, the bill was passed without difficulty. Public attention was but little excited; the works proceeded with vigour; the distance was under a hundred miles; and when the whole was opened for public traffic in 1837, it was probably one of the most important provincial railways ever formed. Its effects, viewed at a distance even, appear great, and at that early period were peculiarly striking. It passed through most important districts; it affected manufacturing and commercial interests alike; it afforded extra facilities for forwarding correspondence, and it gave a great and general stimulus to the business of those towns it united. By its aid the letter-bags sent from London at eight o'clock in the evening were delivered before noon the next day at Manchester, and the dinner tables of the inhabitants of Birmingham were supplied with fish

purchased the same morning at Liverpool. Thus what was once a costly luxury became a common habit, and the operative was enabled to purchase that which previously was scarcely attainable by his master.

On this line was the first contract taken by one of those men whose fortunes and misfortunes form a feature in railways; and Thomas Brassey probably little thought when he made the agreement for a small portion of the Grand Junction line, that it was the opening of a career which, commencing with ten miles only, would lead to the construction of more than a thousand.

There is something striking in the enormous undertakings of railway contractors; and a glance at those of Mr. Brassey seem enough to overwhelm one man. A thousand miles of railway is no small distance; many thousands of labourers is no trifling responsibility; nine millions of pounds on his own account, and nine millions more in conjunction with two others, is no small sum; yet in fifteen years has Mr. Brassey undertaken and succeeded in these things; and at the early age of forty-five is able to look back on a useful, laborious, and—if measured

by deeds—a long life, spent in works which have contributed to the happiness of thousands.

A prominent exception to this gentleman's general success, was in the fall of a viaduct built by him on the Rouen and Havre line, composed of twenty-seven arches, very nearly completed, and costing £30,000. An accident like this would have quenched the zeal of most persons. But it proved a memorable illustration of the character of Mr. Brassey, and was a marked test of the man. Although there could be no moral claim, as, during its construction, he had repeatedly protested against the material, and although the lawyers expressly repudiated all legal responsibility, the fine and almost chivalric spirit of the "descendant of the Brasseys of Bulkeley" burst forth when he said, "*He had contracted to make and maintain the road, and no law should prevent Thomas Brassey from being as good as his word.*"

The engagement was made good; the viaduct was rebuilt; and the word which the contractor maintained inviolate is not inaptly typified by the stability of the work he re-formed. The energy of this gentleman will be appreciated when it is

known, that though sixteen million bricks were required to re-build the viaduct, and though fourteen millions of these were made on the spot, the stupendous erection was finished in seven months.

CHAPTER VIII.

TAX UPON TRAVELLING.—ITS IMPROPRIETY.—THE GREAT WESTERN RAILWAY.—ITS PROPOSAL.—OPPOSITION TO IT.—DINNER TO COMMEMORATE ITS SUPPOSED OVERTHROW.—PASSING OF THE BILL.—THE BROAD GUAGE.—ITS DIFFICULTIES.—ITS SUCCESS.—EXPENSE OF THE LINE.—LONDON AND SOUTHAMPTON RAILWAY.—ITS RISE, PROGRESS, AND COMPLETION.—MR. CHAPLIN.—SOUTH EASTERN.—LONDON AND BRIGHTON, AND LONDON AND GREENWICH RAILROAD.—MR. BONHAM AND THE SOUTH-EASTERN.

In 1832 government determined to assist their ways and means by the taxation of railway travelling. The amount charged was a halfpenny a mile for four passengers, or half a farthing for one. It is always a question how far a government should tax communication, and the question is more important when that communication is on a novel principle, struggling into existence, and untried on a grand scale. A wise executive will only impose those charges which are required by the state's necessities, as all imposts which restrict commercial inter-

course are sure to fall eventually on the government which imposes them.

In the present instance the Liverpool and Manchester railway boldly asserted that "in consequence of the above tax the company's charge for conveying the mail between Liverpool and Manchester would be three-halfpence per mile, instead of one penny as heretofore." For a long period the above impost was maintained. It pressed, as taxation too often does, with more force upon the poor than the rich; upon the artizan by the third than on the peer by the first class. It was unjust in principle, and unwise in practice.

It is now necessary to turn to that Great Western railway which has been truly termed "the most gigantic work, not only in Great Britain, not only in Europe, but in the entire world." The prospectus of this vast undertaking was first issued to the public in 1833, at which time it was proposed to go no further than Reading. The capital then named was £3,000,000; but, as if this were too alarming for the money power of England, its projectors reduced the amount in the following year to £2,500,000. The first application of the company for its Act

of Parliament was in 1834, and the opposition which had been shown to other lines was extended to this. The usual objection that it was the speculation of engineers, attorneys, and capitalists, was urged with the usual shallowness. The facilities of the railway could not be compared with those of the river. The people would be smothered in tunnels, and those that escaped suffocation would be burned in the carriages. Slopes were magnified into precipices, engines were to be upset, necks were to be broken. Eton College opposed it because it would be injurious to the discipline of the school, and dangerous to the morals of the pupils; and it was added, "anybody who knew the nature of Eton boys, would know that they could not be kept from the railway." A farmer objected to it because his cows might be killed in passing under an archway. A gentleman objected because no public benefit could compensate for destroying the beauties of his estate. The water in the Thames, remarked one, would be decreased, and the supply for Windsor Castle be destroyed. And though the general saving of carriage may be estimated from the fact that one person alone said it would be a saving to him of £1,200

annually; though the deterioration on cattle coming to London was estimated at £12,000 a year; though the suffering of the animal could only be measured by the brutality of the drover; though the distance would be diminished, and the speed increased; though its public benefit was proved and its private annoyances would be compensated, the bill was thrown out through the interest of its opponents. Some show of reason was not wanting to justify the rejection; it was declared to be a half measure. It was said that a western railway to stop at Reading was simply absurd, and that the promoters must either have a complete western railway or none.

The rejection was regarded by its opponents as fatal. The Most Noble the Marquis of Chandos presided at a public meeting at Salthill to commemorate its defeat. The fellows of Eton College, with men who by virtue of their names and attainments should have been at the head of this national enterprise, were there in the pride of their hearts to rejoice in its overthrow; and the question was naturally asked, Where were the memories of the men whose names were in the records of that ancient college? Where were the names which

had become eminent in every branch of science, which had aided by their patronage or adorned by their pursuit, every path of literature? whose works and words should have softened the feelings, if they could not heighten the conception, of those who stood in the van of an ineffectual opposition.

When it was found that this opposition was useless, it was said, "The Great Western, though it may reach as far as Bath from Bristol, after having, like a mole, explored its way through tunnels long and deep, the shareholders who travel by it will be so heartily sick, what with foul air, smoke, and sulphur, that the very mention of a railway will be worse than ipecacuanha."

A renewed application for the line from London to Bath and Bristol was soon made. The vigour of the company was unbounded; their resources were large, their liberality was great, their determination fixed; and in spite of provosts opposing and colleges demurring, of the privacy of Windsor being destroyed and the Eton scholars being demoralised, the bill was passed by the end of the session of 1835, authorising a capital of £2,500,000 to be raised on stock, with a loan of £833,333.

The mode by which the opposition of landholders was neutralised, bears the same sad character as with other railways. Every passenger who goes by the Great Western pays an additional fare to meet the interest on this most unjust charge; and every shareholder in this, as in other lines, receives a less dividend than he is entitled to from the same cause. Nor does the blame rest with the conductors of the railway. They were the agents of the shareholders; and were bound to forward their interests. The principle of the case to them was nothing. They were bound to get the Act at the cheapest possible rate, and if the law gave their rich opponents the power of practically stopping the progress of the line, and those opponents chose to avail themselves of the law, the shame rests with the proprietor of the soil, and not with the promoter of the rail. Fancy prices were given for fancy prospects, in proportion to the power of the landowner. Noblemen were persuaded to allow their castles to be desecrated for a consideration. There can be no doubt—it was, indeed, all but demonstrated—that offers were made to, and accepted by, influential parties to withdraw their opposition to a bill which they had declared

would ruin them, while the smaller and more numerous complainants were paid such prices as should actually buy off a series of long and tedious litigations.*

Various other and amended Acts were passed; in 1837 two additional bills were obtained, relating to alterations and to terminus, and in 1839, a fifth Act received the royal sanction, empowering the company to raise an additional stock of £1,250,000, and by loan £416,000.

The favourite project of Mr. Brunel, the engineer to this novel railway, was the broad guage, and that question—to be referred to in 1846, in its struggle with the narrow guage—was opened in the first act of the Great Western.

Previous to the renewal of that vehement parliamentary contest, which is yet remembered by those who witnessed it, and which is still a legend of the elder railway world, Mr. Brunel conceived the idea of changing the width of the rail. The scheme

* "Nothing less than golden arguments of the purest mint," says Mr. Sidney, "would induce noble and gentle landholders to give assent to roads which trebled their estates in value; and vast loss of money and of time was incurred in making those circuits which now excite our wonder and regret, in order to allay the fears of cities, lest contamination should attend the near approach of steam power."

was gigantic. The engineer was a plausible as well as a practical man. The directors were so far acquainted with railroads, that they expected a dividend; and when Mr. Brunel, in certain reports to the directors of the Great Western, laid down general principles, in which he proposed his change, explaining his plan, and showing its advantages, they were unwilling to reject a novelty into which they could not entirely enter. Mr. Brunel conceived that certain great lines would extend over certain districts, in which each company would reign supreme, and that the communications of these districts one with another, would be, practically, of a trifling character. The natural conclusion was, that each company might choose its own guage without the slightest reference to the guage of other lines. And this opinion of Mr. Brunel must be judged of, not by our present views, but by the information of twenty years ago. Had he then conceived the possibility of a system like that which at present prevails, he would have shared the fate of his great compatriot Mr. Stephenson, and, with more justice, been called an idle and ridiculous enthusiast. Had he deemed that the Great Western would want a

line to Birmingham, that the London and Birmingham would trench upon the rights and dues of the Great Western; that connecting links of rails would pass between trunk lines from north to south, and from east to west, rendering a similarity of construction absolutely necessary for comfort and for safety; had he, indeed, surmised one-tenth of those most extraordinary facts which the last few years have witnessed, Mr. Brunel would probably have smiled at his dream with unqualified wonder. His reports were, in the existing state of things, well worthy of consideration, and that consideration they had. His plan, with his reasons for proposing the change of guage from four feet eight and a-half inches, to seven feet, was submitted to Mr. George Stephenson, and that gentleman reported against it. With his own directors Mr. Brunel was more successful, and the act authorising the width of seven feet was passed.

There was something singularly fascinating in the proposal. The imaginative vision of the shareholders beheld Titanic arches and vast tunnels; magnificent bridges and fine viaducts; and the hundred miles an hour prophesied by the engineer, exceeded the

narrow guage to an extent which promised to compel a traffic. Their increased expenses seemed small before their visionary dividend, and when it is remembered that the Great Western was meant to create a demand rather than to supply it, the vague imaginings of the favourers of the broad guage must be allowed for. Provincial patriotism was aroused; the scheme of Mr. Brunel, as it has been said, was at last patronised, and the works proceeded. This at once necessitated a separate terminus. The London and Birmingham, which this line was to have joined, was on the narrow guage, and the London terminus of the Great Western was, therefore, as inconveniently placed as could well be devised. But that which was afterwards discovered, when the railway system was the recognised locomotion of the land, in the break of way and all its awkward accompaniments, was the most striking. The seven feet guage also entailed an increased cost in every department. Although Mr. Brunel at a later period declared that he would again lay down the broad guage under the same circumstances, it is to be doubted whether, placed in a similar position, and foreseeing all that has since occurred, he would act

in a similar way, and choose a similar guage. Enormous extra expenses were necessary, and the Great Western shareholders grew alarmed. "The first plan," says Mr. Sidney, "on which the timbers of the road were placed was an entire failure, and were all relaid. A bridge built over the Thames at Maidenhead, to show how the river might be crossed by two arches while the old bridge required six, fell down twice: it was again rebuilt, and stands a monument of what an engineer of genius can effect with shareholders' money."

It appears somewhat curious in a new power the essential element of which was novelty; where works and ways and locomotives were alike strange and singular; where all was untried and little known, that it should be thought erratic and unwise to introduce a new principle. Such was, however, the case; and numerous indeed were the troubles, and great was the clamour with which the enterprise of Mr. Brunel had to contend. In addition to the construction of the railway, and to the great responsibility which rested on so magnificent an undertaking, the engineer was subjected to annoyances which assumed a purely personal form. The railway world was

against him. Failure was predicted as positive. Meetings of the board threatened his prospects; meetings of the proprietors denounced his presumption. The press, though they did not understand the question in all its bearings, were against it. The people, though they did not know how it would affect them, were afraid of it. It was called the abandonment of a principle; it was said the carriages would not run round the curves; that the axles would be broken; and, to crown all, that the shareholders would be ruined.

It was vain to tell them that it was the finest project in the world; that it would be a monument of national greatness—that foreigners would visit England to see the grandeur of the Great Western; their public spirit hid its diminished head before their private interests; they looked at the cost, and refused to be comforted.

But the high courage of Mr. Brunel supported his great capacity, and unswervingly and boldly did this gentleman uphold and carry out a theory on which his name and fame depended. Against lukewarm friends, against agitated proprietors, against avowed enemies, against the difficulty of inspiring

others with his own confidence, he was successful. In another part of this work the broad guage question will be fully considered; but whatever its faults in comparison with other and narrower guages, it is right to say that it was tried, and succeeded; that Mr. Brunel reaped the fine reward of carrying out his scheme in the face of every obstacle and of every opponent, and that the plan was not unworthy the son of the genius of the Thames tunnel.

There is something marked and bold in all that belongs to Isambard Brunel. Never happier than when planning a novelty, and ever willing to expend his money on that which he believes to be sound, he is a fitting descendant of that Mark Brunel whose name is associated with the above grand idea, and was a suitable assistant against dangers which would have appalled thousands. Called "clever, but theoretical" by some, but "distinguished by the originality of his conceptions and the boldness of his works," according to others, said also to have "made a botch of the Bristol Docks," not being a hydraulic engineer, there are few concerning whom so wide a variety of opinion exists. George Ste-

phenson warred to the knife against the cherished broad guage of Brunel, and thought the atmospheric, on which this gentleman spent large sums, "the greatest humbug in the world." Both these questions, however, are yet unsettled. Though the atmospheric has failed, it may still prove true: and if the broad guage has been declared inferior to the narrow, it was owing to its fortune as much as to its deserts. At any rate, it is just to record of Mr. Brunel, that he is as willing to spend his time in examining inventions as he is to spending his money in testing their promise: that he would risk his whole personal property in an untried enterprise as freely as he would spend a proprietor's deposits; and that never so satisfied as when he can originate, he is the very spirit of progress. When he forced the broad guage on an unwilling proprietary, it required no ordinary power; and nothing but the firmness of this resolute, determined man, could have carried the point. From the period that he was occupied with his father beneath the Thames, he has assumed an important position among the class to which he belongs. He increased the capacity of the locomotive; he planned that great steam-ship whose

loss is yet deplored; and, assisted by his friend Mr. Saunders, has maintained with a gallantry not often equalled in these degenerate days, that struggle with the powerful narrow guage interest which excited so much attention.

At the age of forty-five, a long and useful life appears before Mr. Brunel, of whom it would have been as pleasant to have been more diffuse, as it would, probably, have been unpleasant to the modesty of the engineer of that Great Western railway, the expenses of which exceeded, as usual, the cost of the estimate.

In 1839 a new Act was obtained to raise an additional capital; and in June, 1841, the whole line between London and Bristol was opened for general traffic, when for four successive weeks the receipts exceeded £14,000. The law expenses of this line were £99,091 9*d*., and the land cost £790,218 14*s*. 10*d*. being at the rate of £6,696 15*s*. 4*d*. a mile. These figures, although correct, are scarcely credible; and when the total expense of £56,594 6*s*. per mile is stated, it is curious to think that the railway has paid so well for so long a time, and not that it is now paying so ill.

It is not intended to enter thus minutely into the history of all those companies which previous to the railway mania of 1836, occupied public attention. As, however, up to that period the railroads which obtained may be regarded as ministering to a public want rather than pandering to a public desire; and as they were chiefly legitimate speculations, entered into with a view to investment, and, in this, very different from those proposed after the above period, it is important to treat them separately and independently. The reader may thus learn to moderate his intense indignation when, anathematising railways, he remembers with what unjust demands and impure claims they had to deal, and with what sad and selfish treatment it was their lot to meet. They owe nothing to the country; they owe nothing to the aristocracy. They were wronged by the former; they were contumeliously treated by the latter. They owe nothing to my Lord Brougham; they are not indebted to Colonel Sibthorp. The former made general speeches in their favour, and brought especial cases against them; while the latter has ever been a fierce though not a fatal enemy.

When, in 1832, the London and Southampton line was presented to the notice of an intelligent public, it was considered somewhat strange and singular. It was natural enough to have a trunk line between Liverpool and Manchester; it was perfectly legitimate to propose the iron way betwixt Birmingham, which supplied the world with its manufactures, and London, the temporary recipient of its produce. But Southampton was in the position of neither: it possessed no manufactures like Manchester; it was deficient in the commercial power of Liverpool; it lacked the capitalists of Birmingham; it had not the attractions of Brighton; it required no rapid communication with the capital; and when its promoters first proposed to the people of Southampton the advantages they would derive from the rail, and Sir John Easthope explained to the *savans* of the city the premium they would procure from its scrip, it does not appear to have met with a very enthusiastic reception. The energy of its supporters, however, carried it through this portion of its difficulties, and when Lancashire, the home and haunt of railway enterprise, supported it; when the shrewd Scotch followed the example,

and they of the Stock Exchange dealt in its shares, a more hopeful feeling spread throughout the body corporate.

The first estimate was between £800,000 and £900,000, and this, in the absence of that information which has since been so dearly paid for, appeared fair and feasible. It would be inconvenient to enter on the subject of its early difficulties, they were patent to all the lines, and it is sufficient to state that in July, 1834, the Act of incorporation received the royal assent. The amount authorised to be raised was £1,000,000, in 20,000 shares of £50 each, with an additional power to borrow £330,000 by loan.

A grievous error was committed, and these sums soon proved insufficient. In entering into contracts for the works, they were unhappily given in small lots to small men, at a low price, instead of being let to those who had capital and credit to lose, and upon whom full security could be placed. It was on low and unsatisfactory estimates that the bill was passed; and while the work was easy, while prices and pay remained depressed, while nothing extraordinary occurred, the work was done;

but when any engineering novelty arose, the poor contractor was powerless. The smallest difficulty stayed him; the slightest danger paralysed him. He could not complete his contracts; he lacked resources to pay the penalty; the works were often stopped; the directors as often in despair. A second Act was passed in 1837, empowering an additional capital stock of £400,000, with a loan of £130,000; and in 1839, a third Act was passed for the purpose of constructing a branch to Gosport.

Previous to the Act of 1837, it was evident to all connected with the line that £500,000 more would be required, and the proprietors were startled. The calls were difficult to be procured, the shares were at a terrible discount, the prospects of the company gloomy, when the gentlemen of Lancashire, who were interested, inquired into the circumstances connected with its progress. Aware of the difficulties which had beset the paths of railways generally, they with great promptitude appointed a deputation to examine the accounts, to revise the estimates, and to report on the position of the corporation. This inquiry was satisfactory. Money to continue the works was advanced, two of the

committee were appointed directors, and an entirely new system was adopted. Mr. Giles resigned the engineership, the services of Mr. Locke were procured, a complete plan, showing the exact position of the work, was drawn out; everything which could assist in lessening the difficulties was adopted, and a thorough revision of traffic and expenses entered into. Mr. Chaplin, wisely adopting the new mode of travelling as the basis of his future proceedings, joined their ranks, and to his sagacity may be traced much of the ultimate success of this railway. He gave every information which his experience had procured; he offered every recommendation which his information could suggest; he assisted them by his counsel, and he raised them by his influence. A fresh estimate was made of the cost of the line; much unnecessary work was avoided; £1,700,000 was regarded as the probable sum it would ultimately cost; and it will afford a significant remembrance of the difficulties which yet clung to the railroad, when it is said that the only way of procuring the money necessary to finish the undertaking was to raise £50 shares and sell them at £25, thus issuing them at a fearful discount.

Under the new management the line proceeded rapidly. Able and responsible contractors were chosen; the expenditure of one year doubled that of the three preceding years, and the line opened throughout on the 11th May, 1840. So close and cautious had been Mr. Chaplin's estimate of traffic, that within three months the receipts amounted to the sum supposed. "This," says a journalist, in 1845, "is one of the early lines, and furnishes a good example of the difficulties, discouragements, and disasters encountered by the enterprising men who, at that date, undertook the arduous duty of constructing, from private capital, these great public works, unaided, even discountenanced, by the legislature and the government; regarded with hostility, and even with hatred, by the owners of the land they were destined so materially to benefit; and considered, even by juries of their countrymen, in those days, as proper objects of unlimited and legitimate plunder. Surrounded by these difficulties without, they were met by no less formidable ones within: the infancy of the system, the inexperience of engineers, of contractors—the insufficiency of estimates—the unforeseen difficulties of works—the enormous

demand for additional capital—the doubtful, or worse than doubtful, credit of the concern, evinced by shares at a discount, and without demand—discouragement, difficulty, and danger on every hand; yet did these brave men carry on their undertaking steadily, and stoutly, and manfully, with sagacity, tact, and courage of no common order, till they accomplished their great work, and brought it to its present state of excellence, prosperity, and high, yet most deserved good fortune. It is such enterprises and such men that are the honour and the strength of a country; the sources of its wealth, the causes of its prosperity; yet these are the men whom now, forgetful of past obligations, some writers, and even ministers, taunt with opprobrious epithets, and treat as narrow and selfish monopolists—as the enemies of the public and the state—and most of all, of the poor."

The cost of this line is another curiosity when compared with the estimate. The capital proposed was one million; the capital raised was two millions. The actual expenditure was £2,592,000, the land alone costing more than one-third of the entire original estimate. Thirteen thousand pounds per

mile was the supposed—more than double was the real—cost.

It has been seen that Mr. Locke was called upon to finish the line, and the intelligent countenance of this gentleman, for whom all the honours due to a high order of engineering have been claimed, is sufficiently familiar. The pupil of George Stephenson, his fame dates from Chatmoss, over which he assisted to form the road, and to which he owes much of his early experience. The Grand Junction from Liverpool to Birmingham was by him; the London and Southampton was under his inspection. Young and energetic, he was a valuable aid in all those parliamentary struggles between landowners and railways which have excited so much attention, and spent so much money. Since then he has raised a great reputation. He formed the magnificent viaduct and tunnel of the Manchester and Sheffield; he introduced passenger traffic into Spain; the principal portions of the line between Paris and Aberdeen are by him; and to this gentleman has been awarded the praise of keeping his works within his estimates.

There is an easy elegance in the oratory of Mr.

Locke, which is agreeable to hear, and this is equalled by his choice of language. A member of the legislature, he speaks there with much effect, worthily representing the interest to which he is allied.

Such was the man who took the place of Mr. Giles at the time that Mr. Chaplin gave his assistance to the London and Southampton, and to none more than Mr. Chaplin was the new mode of travel important. It struck at the root of his business; it was destroying the arrangements of years; it was upsetting the combinations of a life. When, therefore, this proprietor of numerous coaches and almost innumerable horses, saw the London and Birmingham road occupied, and every other way seized on by the advocates of the locomotive; he saw also that he must take some decided course. It is not then to be wondered at that when, as already shown, that which is now known as the London and South-Western was in difficulties, Mr. Chaplin, possessing both mind and money to aid it, assisted, instead of decrying the railway; parted with his stock in trade; became one of its directors, and entered boldly and decidedly into it. His intel-

ligence and capital were recognised: he soon became deputy chairman; was elected in 1842 to the chair itself, and since then has maintained his position. Like other railway men, he has entered Parliament and is not undistinguished among that class which owns a Stephenson, a Glyn, a Hudson, and a Locke in our great house of legislature.

For the railway known as the London and Brighton a fierce and factious contest ensued. During the period of excitement five separate lines were proposed, and five contending powers disputed the palm. The London and Brighton railway contest is a proverb for reckless expenditure; nor will the following fail to surprise the reader, if not already acquainted with the parliamentary expenses of the competing lines. The sums spent by each company in endeavouring to obtain an Act were:—

Rennie's line	£72,000
Stephenson's	53,750
Cundy's	16,500
Gibbs's	26,325
South-Eastern	25,000
	£193,575

The most direct, but the most difficult way, was chosen. The earth works were of an extraordinary

character; the bridges and viaducts were difficult and numerous; the tunnels were long and expensive, and with such a combination who can wonder that though the first report of the directors stated the whole cost of the undertaking would not exceed £23,376 3*s.* 9*d.* per mile; the actual expenditure amounted to £37,568 17*s.* 6*d.*, being an increase of £14,192 13*s.* 8*d.* per mile.

As the first which had its commencement in the metropolis, the London and Greenwich railway demands notice; and in looking back upon the high hopes which accompanied its formation, on the large dividends promised, and on the excitement it occasioned, there is something akin to melancholy in the knowledge that its prospects were fallacious; that its dividends were visionary, and that its importance is now swallowed up in the South Eastern.

As a specimen of the dreams which ever accompany new undertakings, it may be said that its arches were to bring large rentals as warehouses; that pedestrians were to pay a toll; that a hundred thousand were to travel by it daily, and that the three millions of people who yearly visited London were to travel on it as a curiosity.

The South-Eastern railway was projected in 1833, in the form of a line between London and Dover. After a severe struggle with the North Kent and Central Kent railways, an Act was obtained on the 21st June, 1836; by this a joint-stock capital of £1,400,000 was authorised, with power to raise an additional £450,000 by loan. Various other Acts were afterwards passed to sanction several deviations in their route, and considerable expense was incurred in the endeavour to procure a line to Brighton.

That the utmost interest was made with senators, and that they were personally canvassed for their votes by the South-Eastern, no less than by other railways, was made evident; and that a legislator received £300 in the shape of premiums is indisputable; although, from the statement given by Mr. Bonham, the gentleman in question, he regarded it as a reward. It is only fair to give his own statement as at once an elucidation and a history.

"In the early part of the session of 1836 Mr. Wray, to whom I was under considerable obligations, came to me and said, 'I am very much interested in the success of the South-Eastern railway, and I wish you would give us a lift; I want your advice

on some points.' I said, 'My dear Wray, I owe very great obligations to you, and I will do everything I can to serve you.' He said, 'I should be very much obliged to you if you would.' And upon that I have not the least hesitation in saying that I did all I could individually to assist Mr. Wray in the object he had in view; that is, in plain terms, I did what I could to assist him in passing that bill, both in and out of parliament. Mr. Wray never held out to me one word, nor did any conversation ever take place, as to any advantage of any kind or sort that I was to derive from it. I considered it a great personal advantage—I mean personal with reference to the debt of gratitude I owed him. I considered it a great pleasure to myself to do what I could for him. There were some questions upon the French lines where I gave them some advice—I will not say assistance—because they were able to assist themselves. I never had any communication in any way with any members of the South-Eastern railway committee; I never had from them, directly or indirectly, any offer of any personal advantage to myself, to be derived from it. After that bill was passed, Mr. Wray came to me, and stated that the South-Eastern

railway company felt that I had been of use to them—great use to them, I think he said, and that they had kept a quantity of reserved shares, which had not been disposed of, and that they had determined to appropriate one hundred shares for my benefit. Mr. Wray said, 'I know it will not be convenient for you to hold these shares—I will hold them for you; and I think I can derive some advantage from them.' Mr. Wray, I think about three weeks afterwards, came to me and said, 'I have been able to make three hundred pounds of those shares, which I will give you.'"

Thus Mr. Bonham acknowledged to have received for his services the three hundred pounds which resulted from the sale of the shares, and a committee of the Commons reported that they felt the greatest regret in being obliged to direct the attention of the House to this circumstance; but they were bound in justice to Mr. Bonham to add, that they received no evidence to show that such gratuity was the result of any previous arrangement between Mr. Bonham and the company.

It is unnecessary to detail the progress of such unimportant lines as the London and Blackwall, and the

London and Croydon. On the former the electric telegraph was first worked, and the latter is remarkable for nothing save its huge cost. They, with those already given, and with the Eastern Counties, which occupies the ensuing chapter, composed the principal lines up to 1836. Enough evidence has been adduced to prove the difficulties opposed to railways, nor will the reader find the following history deficient in similar troubles.

CHAPTER IX.

LONDON AND ESSEX RAILROAD. — FIRST PROSPECTUS OF THE EASTERN COUNTIES.—OPPOSITION TO IT.—ITS ESTIMATE.—LORD PETRE'S QUARREL WITH THE DIRECTORS.—HIS TRIUMPH.—FORTUNES AND MISFORTUNES OF THE EASTERN COUNTIES.—PERSONAL SKETCH OF SAMUEL MORTON PETO.

THOUGH last, not least of those lines which will be treated in detail, stands the scape-goat of companies, the pariah of railways, the Eastern Counties. Under the title of the "London and Essex railroad," the initiative was taken in 1831, in that undertaking which has excited more attention, caused more alarm, created more correspondence, and unhappily witnessed more accidents than any other railway in the kingdom. Arising, like all others, from the success of the Liverpool and Manchester, the prospectus pointed to its progress, and promised more than its profits.

Nor will the social economist be displeased to see how the promoter heralded his project:

"By the proposed railroad, places thirty or forty miles distant from London will be brought within a two hours' journey. The whole country will become contributory to the London market; the first necessaries of life will be supplied in greater abundance; competition increased, and a reduction in prices the necessary consequence. All descriptions of persons will be enabled to participate in many articles, the produce of the soil, from which the poor, and even the middling classes, in a degree, are now precluded, from high prices, occasioned by expensive cultivation in the immediate vicinity of the town."

These were some of the advantages promised; but while the luxuries of the middle class were to be augmented and the cost diminished, owners and occupiers of land were also to benefit. The entire agricultural districts were to improve in productiveness and value. Thousands of labourers temporarily, and many permanently, were to be employed; coals would be bought for comparatively nothing; and it was said with a cool intrepidity worthy the palmy

days of 1845, that "every shareholder would in a few years save the cost of his share in his fuel." The fisheries, it was added, would be more abundantly employed. The supply would be large and certain. Westerly winds and opposing tides must sink into insignificance, while millions of mackarel would supply the consumer and raise the price of scrip. Holland, Hamburgh, and other parts of the continent, would avail itself of the new influence to increase our trade; foreign mails and fresh sea water; a level country and few bridges; no viaducts and no tunneling; with moderate embankments, and no "private property of particular value" to invade, formed an additional stimulus. Large dividends and "gradual return of the capital," completed a picture, which, to judge from the prospectus, only failed in procuring shareholders because it was guiltless of presidents and vice-presidents, had a blank space for the directors, and left all the other offices to be filled by the imagination of its reader. Such were a few of the items which in 1831 first declared to the people of the eastern counties of England that they required a railroad to increase their prosperity.

The next proposition bears the date of 20th Sep-

tember, 1834, and the Eastern Counties railway itself was before the public. A curious and most interesting document was presented:

The cost of the entire line would be	£1,567,000
Annual expense of working it	150,000
Passengers would produce	153,837
Merchandise and provisions	206,919
Agricultural produce	49,909
Live stock	157,055
Coals and manure	18,493
Fish	40,000
Traffic now in existence	626,213
Of which the railway would procure	417,475
Deduct annual expense	150,000
Clear annual profit of fifteen per cent.	267,475

This was the crude account tendered. No credit was given for an increased business, although it was stated that the communication on the Liverpool and Manchester had been multiplied six-fold, and on the Stockton and Darlington forty-fold. No allowance was made, on the other hand, for compensation to landowners, for expenses in obtaining the Act, or for a hundred of those frailties and fallibilities which the railway is heir to.

The number of acres required was calculated at

two thousand, averaging £100 an acre. Two thousand labourers were to be constantly employed during its execution; and it was thrown out as a lure, that as the Liverpool and Manchester railway paid one-fifth of the poors' rates of every parish through which it passed, the Eastern Counties might reasonably be expected to do the same. Mr. Braithwaite was acting, and Mr. Vignolles was consulting, engineer.

Opposition was not wanting for the directors. It met them in the county papers; it encountered them in pamphlets. They were assailed by letters; they were denounced in party journals. They were accused of empty assertions, and fallacious promises. The solicitors were tauntingly told that "by their own superior intelligence they had ascertained the landed and commercial interests of Norfolk, Suffolk, and Essex were quite ignorant of their own concerns." It was said that if the railway were to be carried into effect, the nursery of our best sailors would be destroyed; the foundation of our maritime decay be laid, and the downfall of England's glory—that downfall which has been preached and prophesied so often—be ensured.

The promoters were not idle. They appealed in public to "the united intelligence of the three kingdoms," and they promised money in private. They claimed the support of the commercial interests; they attacked the cupidity of peers; they assailed the philanthropy of parish rulers; they promised it should be the principal and favourite medium of transport for more than a million of people annually. There were no canals to oppose it; no railways to compete with it. It would embrace more towns than any other line, and it would convey a greater number of passengers. Above all, it would pay fifteen per cent. Notwithstanding the exertions of engineers and secretary, the scheme was abandoned for a time; while its opponents sat down to congratulate themselves on a victory, its friends prepared with renewed vigour to prepare another plan and another prospectus.

The names which graced the latter—men who bore the burden and the heat of the day—were not names belonging to our great commercial aristocracy. There were physicians from the suburbs, and gentlemen at large from the west end; there were peers who never attended the board; with

barristers who, whether briefless or not, are generally men of more words than work. But there were also men of business. The name of Thomas Gibbes, one of the oldest on the money market; of Sir Robert Harvey, well known in the country banking interest; of Mr. Tite, who probably joined it to become its surveyor, ; of Desanges, of Wood, of Butler, were some guarantee that if work were to be done it would be done well. The prospectus issued with the sanction of this directorate was re-written; the calculations re-modelled, and an abstract of its contents may be interesting to the reader, evidencing, as it does, the uncertainty of railway estimates, and showing also the progress which railways had made in popular opinion.

"The superiority of railways as a means of inland transport, may now be considered as established beyond all chance of refutation. . . . . It has again and again been proved to the perfect satisfaction of both houses of Parliament, that railways furnish a far cheaper, safer, and more expeditious mode of conveyance for passengers and most kind of goods, than any other yet devised; that as soon as a railway has been opened in any district it has not

only met all the demands of the traffic existing at the time, but increased that traffic to a degree, and with a rapidity, wholly without example; that wherever railways abound most, there the greatest rise in the value of land has been observed, and the most rapid strides been made in agricultural, manufacturing, and commercial prosperity; that they have not only materially reduced the poor rates of every district they intersect, by furnishing profitable occupation to large numbers of the unemployed poor, but have still further relieved the old rate-payers by contributing largely towards the reduced rates, and that while thus conferring incalculable benefits on the community at large they have yielded to their proprietors a quicker return on the capital invested than was ever obtained from any other description of public undertaking."

The railways then in existence were appealed to. Their past profits and their present prospects were shown. The increase in their traffic was pointed out; the saving of time alluded to, and it was added, "that the value of property of every description in the vicinity of railways should have risen so rapidly since their establishment, ceases

under these circumstances to be matter of surprise." Immediately after the opening of the Liverpool and Manchester, the value of adjacent land had arisen generally fifty per cent., and portions of ground in particular situations had advanced 1,400 per cent. The philanthropist was told to look at the employment of the poor, and the diminishing of the rates. The speculator was told to look at the premiums and prices of existing lines. "Other railways may be interfered with, but this never can. As a great main line it must always stand alone, dividing with no other railway, but receiving the contributions of many." Nothing marks more the crudity of the report, the credulity of the public, and the miscalculation of the surveyors, than the fact that the estimated expenditure for land, compensation, engineering, and parliamentary expenses was £270,000, while the actual expenditure was £718,765 16*s.* 10*d.*

The following is a copy of the assumed expenses of the line by the prospectus of 1st December, 1834:

To purchase of land, 1,000 acres, at £150 .	£150,000
Compensation to owners and occupiers .	100,000
Offices, depôts, sheds, gasworks, pipes, and lamps	20,000

Excavations and embankments	£200,000
Masonry, bridges, culverts, &c.	200,000
Rails, chairs, keys, pins, plugs, freightage, and cartage	271,648
Blocks, sleepers, ballasting, and laying rails	226,512
Fencing	74,000
Seven water stations	3,500
Seven pumps	700
Forty locomotive engines	40,000
Two hundred and fifty waggons	7,500
Sixty coaches	9,000
Engineering and surveying, parliamentary and law expenses, canvassing proprietors and occupiers, and other incidental disbursements	20,000
	£1,322,860
Allowance for deficiencies and unforeseen expenses	277,140
	£1,600,000
Working line, per annum	200,000

The revenue calculated on was

Passengers by public conveyance	£121,677
Parcels	24,335
Mail bags	5,000
Passengers by private conveyance	17,962
Merchandise and provisions conveyed by land	198,412
Corn, flour, malt, &c., conveyed coastwise	49,909
Cattle, sheep, lambs, pigs, poultry, by land	157,053
Coals and manure	18,493
Fish	40,000
	£632,841
Two-thirds of the above by railway	421,894
Working railway	200,000
	£221,894

Showing a dividend of 13 per cent. on £1,600,000

But the Eastern Counties met an animated competition from rival companies. The Northern and North-East line issued prospectuses, and the Grand Northern railway occupied public attention to some extent. Both the preceding lines were to proceed to Edinburgh, and "would cost," said their opponents, oracularly, "more millions than have ever been yet subscribed, or are ever likely to be subscribed, for any similar undertaking." Circulars and handbills were plentiful, but the Eastern Counties maintained its ground, while shareholders veiled their private interests under assertions of the public good. On the opposition side it was said, the new railway "ran away" from all the traffic of Norfolk, Suffolk, and Essex; that it passed through the poorest and least populated districts, that it would not touch one town of importance, that it would please few, offend many, and yield little, if any, profit.

Reasons in support of the line were gathered from all quarters of the globe. Oyster-beds and manufacturers, the British herring-fishery, and the East India trade were pressed into the service. Places which had hitherto remained in modest obscurity, were to be places of note. And it was added,

"the benefits which will result from this railway will not become merely local and national; it will become the great highway to the British metropolis from Scotland, Holland, Germany, Hamburg, and Lubeck." Scientific men wrote in scientific journals with energy and eloquence of the advantages of the new undertaking. Daily papers were called in to assist it. The progress of the locomotive was dwelt on by some with regard to its social influence: its pecuniary advantages were blazoned by others.

"So many and so various are the schemes for railways," said a writer at this period, "that one can hardly take up a newspaper, but some new project, gilded with an assurance of twenty or thirty per cent. profit, stares him in the face. Twenty-seven of these projects are now in progress, to exercise the wisdom and exhaust the patience of our legislators. Whether they will turn out profitable to the shareholders, is a knot time alone can untie. There is, however, no question that the state of society needs and must have this new species of transit, and that railways will go on progressing for many a year, until every link of the chain of internal communication is completed. Some think the present prejudice of the public in favour of rail-

ways, is a mania. It is a mania like the astronomical madness of Copernicus, the more it is known, the more it will be approved and the better it will be supported: for it is a mania whose cause is necessity, utility the effect, and mankind the party to be benefited. It will therefore continue, the public being generally too wise to neglect what is found to be advantageous." Need it be added that an eulogium on the Eastern Counties followed?

"Hardly a day passes," wrote an evening paper, in October, 1835, and the writer deems no picture so true as those chronicles which reflect the fears and the feelings of the times, "but we have to record some additions to the number of railroads already in progress, or proposed to be carried into effect. . . . . The superiority of the railroad over every other mode of inland conveyance, has been proved by such a weight of evidence, that it seems almost a work of supererogation to recommend it to the public favour. The advocate of improvement, however, is ill-qualified for his office if he flatters himself that his task is finished when he has demonstrated the utility of any of those plans of amelioration which the spirit of enterprise, now so actively

engaged in developing the national resources, is constantly bringing forward. He must not forget that the obstacles which lie in his path cannot be surmounted but by unwearied perseverance. He must return to the charge again and again, not disdaining to combat the oft-refuted objection, and labouring to weaken, if he cannot remove, the prejudice which clings to the old ways. He must not lose his temper when a timid old gentleman tells him that to travel at a speed of twenty miles an hour smacks of revolution. And when the wisdom of our ancestors is pleaded against the rapid movement, it becomes him to prove that the slow pace of our forefathers had no hand in rendering them the glory of the world and the envy of surrounding nations."

It was said with justice that the unprincipled opposition to the railway had been in some degree beneficial. That it had proved to the legislature, and to the world, the great advantages derived from it; it had decided that in cheapness, safety, and expedition, no mode of conveyance could compete with it; that wherever it was introduced it increased the traffic of the district; raised the value

of land; gave a new and powerful impulse to agriculture, manufactures, and commerce; reduced the poor-rates, and promised a high but rapid profit to those who invested, "combining by a happy union, public with private interest." Shall we say the Eastern Counties was said to promise more than all these great and glorious benefits.

The transaction of Lord Petre with the Eastern Counties directors, stands almost unparalleled in the history of railway adventure; but it would appear, so far as the writer has been able to ascertain the facts, that if his lordship clung to that which the law allowed him; if, like Shylock, he exacted his bond, it was owing to certain unwise and undignified irritations to which he had been subjected. Previous to obtaining the bill, a secret engagement was entered into with his lordship by the provisional committee, who engaged to pay him the sum of £120,000 nominally for the land through which the rail was to pass, but really for the withdrawal of an opposition which might have been disastrous. When the bill was passed there appears to have been some objection to fulfilling the contract on the pretended ground of misrepresenta-

tion. Nor did the directors hesitate to assert that to fulfil it would be a fraud on the proprietors, the legislature, and the public. But if the company were unwilling to pay the money, his lordship was equally unwilling to give it up. He obtained an injunction against them; he opposed and prevented them from passing through his grounds; he harrassed and irritated them as they had irritated him, and with far more effect. But the stake was too great to yield quietly. In addition to the money involved, it has been said Lord Petre's pride was raised. The engineer and secretary—in what manner it does not appear—had offended his dignity. The board was urged by these gentlemen to oppose him. They were told that his claim was invalid; that their opposition must be successful, and when an amended bill—hereafter to be alluded to—was brought before the commons, Lord Petre was enabled to oppose them with great effect.

The company, wishing to be safe, appointed seven eminent surveyors to report as to the damage likely to be caused to his lordship's estate; copies of their reports were forwarded to Lord Petre, and an offer

was made to use them as the basis of an amicable arrangement. His lordship, however, positively declined any change in the terms of the bond. All his influence, with that of Mr. Labouchere, whose estate was also to be invaded, was used to oppose the progress of the line; and so strong was the feeling, that the directors consented to stay the progress of the bill, and, seeing the folly of their proceedings, to refer the claim to arbitration. Lord Petre, however, refused all such interference, and the company was emphatically grounded. If they resisted their opponent in the house, the bill would be lost and proceedings delayed for a year. If they resisted him in the law courts, the result would be the same. If the bill were abandoned, the compulsory power of the company by its first Act would soon cease to exist; and if they even gained a chancery suit and annulled the contract, their opponent might refuse to sell his land at all, and thus a gap of six unfinished miles grace the line.

There only remained, therefore, for the company to pay the money. His lordship beat the board, and exacted the full amount of his bond: £120,000 with interest, was paid for land which was even

then said to be only worth £5,000, and which at the present time is perhaps improved by the change. It is due to the directors to add that though they regretted the payment of so large a sum, time, which has modified their wrath, has made them equally regret the spirit with which they opposed it.

Three years had by this time elapsed since the design of the Eastern Counties was first given to the public. The various interests which had tended to delay its progress had prevented it from being fairly developed, until about ten months previous to its incorporation in July 1836, and when the provisional committee was formed, there remained only a few weeks for operations which usually occupied many months. The energy with which the project was proceeded with, during this brief period, was irresistible. The sections and surveys of one hundred and twenty-six miles were formed in six weeks. The proprietors were canvassed for the breadth of half a mile along the whole line. Essex, Suffolk, and Norfolk, were travelled by a deputation of the committee; public meetings were called wherever they went; private representations were made to influential individuals; part of the monied

interest aided the scheme, and before the second reading of the bill, the greater portion of the capital was subscribed. Shares were taken by the inhabitants of the principal commercial towns; and without the help of the men of Manchester, Birmingham, and Liverpool, who subscribed for many thousand shares, the scheme must have fallen. With their aid the bill passed the House of Commons, a committee of which reported "that the Eastern Counties railway between the termini would traverse the most populous and most cultivated parts of the counties through which it was intended to be carried, and that great benefit would be given to trade and agriculture by its adoption."

When the bill had passed the Lower House, its opponents, stimulated, perhaps, by the thought of Lord Petre's one hundred and twenty thousand pounds, endeavoured to injure it in the Upper; "but," said the first report, "the directors, by meeting the parties with the same promptness and in the same fair spirit which had carried them successfully through their previous negociations, effected amicable arrangements with them."

What these "amicable arrangements" were, may

be traced in the history of all selfish opposition, and may be judged from the fact that they formed an excuse for the large preliminary expenses which swelled the accounts presented to the proprietary. It produced, however, an unquestionable effect. Those who had received money supported the company most strenuously, while those who hoped to receive it, were yet stronger in their expression of opinion.

The Eastern Counties railway was received as the line to be supported, and after a most extraordinary opposition with as extraordinary methods to subdue it, the company was incorporated, and a career commenced which will long make that corporation marked and memorable. The first meeting of the shareholders shortly followed, and it is scarcely possible to read unmoved the glowing orations of the speakers, or to think without a sigh that "Ichabod, Ichabod, the glory is departed!" is written on the heart and saddens the brow of every shareholder. But it is necessary to follow the prospects of this fine line, and equally so to show the elation which glowed in the heart, and was uttered from the lips of chairman and of proprietor.

"You are here assembled in such numbers and

with such cordiality of feeling, because you see in the new means of communication which we are about to open between the metropolis and the various cities, towns, and ports on our eastern coast, a prospect of one of the proudest triumphs of the march of science, because you feel assured that by it the stream of traffic and correspondence in this quarter of the kingdom will be preserved in the same channel in which it has run for ages, re-invigorated and redoubled; because in countless ways it must stimulate the industry of every place through which it passes or goes near, or becomes connected with; because the agriculture, now depressed, and the manufactures of the eastern counties will be both eminently promoted by the means which it will afford of cheap and speedy transmission to the greatest mart in the world, of the produce of the ploughshare and the fabrics of the loom; because from that mart will flow in return to the eastern counties ample supplies of every commodity, foreign or domestic, of which it is the great storehouse; because the fisheries of our eastern shores, freed from every restraint on their abundance, will become ten times more productive than ever;

because the ports of the eastern counties will once more be rendered the favourite ports of ingress; because this railway must bring with it whatever can give vigour to industry, make commerce active, or render a people happy."

Yarmouth, it was added, would renew her youth and fill her harbour with commerce, while every port near which the railway passed would be prosperous. It was a picture which many enterprises present in their youth, and it was a portraiture of the sanguine character of companies ere they have spent their cash, lost their credit, and find how difficult it is to make shareholders respond to calls.

A peculiar fortune, or misfortune, seemed to follow the Eastern Counties railway. Although a line of much importance, it carried no weight in the money market. Although its engineers calculated on no great difficulty, they found their calculations erring. Although the directors judged the land would present no obstacle in its owners, they found themselves hampered with an engagement to one of the lords of the soil, which they could with difficulty pay. Although they expected to receive their calls in proper time, they found the panics of the

money-market interfering with their expectations. The extension of the powers of the company was opposed. The owners and occupiers of land resisted it by precept and by example; while, to conclude this agreeable picture, some of the shareholders were arrayed against others in the Court of Chancery to prevent the remainder from carrying out their plans.

That money was not forthcoming with the necessary rapidity may be judged from the fact, that in July 1837, it was proposed to the proprietors voluntarily to advance £600,000 at 4 per cent., and so satisfied were the directors that the line must pay 10 per cent., they recommended the shareholders to divide, when the line should be opened, a dividend at that rate on the whole of the paid up capital.

In 1837, 61,000 out of 64,000 shares were registered; half were held by the men of Liverpool and Manchester, and there were 1,410 shareholders altogether.

Some of these, however, refused to pay the calls. They had subscribed in expectation of a premium, and they objected strongly to advancing their cash

when shares were at a discount. Letters were written to defaulters that their shares would be forfeited, but they paid no attention. Advertisements were published to remind the defaulters that the works must stop; but they refused to notice them, until a new and more alarming mode was devised to recal the delinquents to their duty.

"It is painful to the directors," says a letter, bearing date July, 1839, "to have been obliged to resort to legal proceedings to enforce the calls; but in justice to the shareholders who have paid, and considering that the works must stop unless the arrears be promptly settled, the directors have had no other alternative but to compel payment by legal means."

As legal measures are slow, however, and capital was required immediately, the directors continued to make further calls, while the others remained unpaid, and the effect which this had upon a money-market already depressed, may be imagined.

The funds of the company being exhausted in past and prospective engagements, the shares being at 50 per cent. discount, the capital being difficult to collect, the compulsory power to purchase land shortly

ceasing, the directors deemed it necessary to apply to parliament in the session of 1838, for power to raise by loan a sum equal to one-third of the capital, together with a prolongation of their powers. After the opposition of Lord Petre and Mr. Labouchere, already detailed, was negatived, the bill was obtained, and on 27th July, 1838, it received the royal assent.

The following is a list of the provisional committee to whom the promotion of the line is due; and the career of this company will be resumed at a future period in detailing the position occupied by the Railway King in its councils, and the effect he produced on its interests.

PROVISIONAL COMMITTEE OF THE EASTERN COUNTIES RAILWAY.

Sir Robert Alexander	Thomas Gibbes
Henry Bosanquet	William Gunston
Cornelius Butler	Charles Thomas Holcombe
Reverend John Chevallier	Col. Sir Robert Harvey
George Clapham	Charles Hood
John Cobbold	Henry Luard
W. C. Crawford	Joseph Marriage
Louis Desanges	Thomas Robertson
Lord Charles Fitzroy	William Tite
Thomas B. Tyler	W. Collings Wells.

The Cambridge portion of this line, now known as the Eastern Counties, was constructed by Mr. Samuel Morton Peto, about 1843; and to the railway

contractor who has arisen with the railway power, this gentleman should be an example and a type. Born of that great middle class to which England owes so much of her grandeur, leaving school at an early age to serve an apprenticeship, it is to his honour that, determined to attain a practical knowledge of the work to which he was devoted, the future legislator handled the trowel of the mason, and worked with the chisel of the carpenter, with characteristic energy.

Apprenticed to his uncle, one of the largest builders in England, he had scarcely emerged from his servitude, when he became that uncle's successor; yet he did not forget that labour is the lot of life, nor did he shrink from the responsibility which his position entailed. The firm of which he became a partner by his relative's death, increased in business importance, and, apart from the ordinary branches of the builders' craft, formed large contracts. The members of it devised Hungerford-market and rebuilt the Houses of Parliament; they erected clubs, and formed model-prisons; contracted for theatres, built castles, and constructed docks of the most perfect character in the kingdom. When, therefore,

in 1834, the new mode of locomotion had forced itself on public notice, Mr. Peto, seeing at once its power and the position it must give to those who forwarded in it the material progress of England, dissolved his connexion with the building firm, and became a "railway contractor." From his first work —the Wharncliffe viaduct—he has been prominent among those whose life is on the rail. He has been first and foremost in singly taking contracts at which companies would once have hesitated; and he has been one of the few who, holding a moral and physical sway over thousands, have not betrayed their trust.

It is little to the public that Samuel Morton Peto has prospered in the pursuit he embraced; it is little to them that seven hundred miles of railway have been formed by him; that from north to south, and from east to west, his contracts have extended; or that the success of these contracts has made him one of our many *millionaires*: but it is much to the public that in the words of one who knows him well, "It has been Mr. Peto's maxim through life, that all who shared with him his toils and labours, should have their full share of his rewards." It is a principle

which the writer rejoices to relate, and it is a principle which, in itself peculiarly honourable, is a proof also, that his mental are equalled by his moral qualifications. Identified with the people, he acts as if he were one of them. He feels that property has its duties as well as its dues; its responsibilities as well as its rights. When placed over a large body of rude, illiterate men, he treated them as brothers, and not as brutes; he did not pay them at long intervals, leaving them in the interim to the mercy of usurers; he has ever repudiated the truck system; he has never made twenty-five per cent. of their daily bread; and the night of payment with those under him, therefore, has not been a scene of disgraceful strife.

But these are negative qualities. Mr. Peto has been a positive benefactor to the railway labourer. Believing that the 14,000 navigators—the average number he employed for several years—had minds as well as bodies, he acted up to that creed. He supplied them with books, and engaged for them teachers. He formed sick-clubs, introduced benefit-societies, and taught them the use of saving-banks. He built temporary cottages, and let them at a proper price. He took care that the apartments

should be tenanted with due regard to decency; and the consequence was that, in the words of Bishop Stanley, "the gin-shops were deserted, and the schools were full." He personally superintended his works as much as their vast extent would permit, and if not physically, he was morally ubiquitous. Wherever his men were gathered in numbers, there a large room arose, in which, when heavy rains obstructed the work, it was no unpicturesque sight to view the hard, athletic navigator listening with grave attention to some volume which, striking at once his reason and his fancy, kept him from drink and saved him from debauchery. Many a man, before his engagement with Mr. Peto in utter ignorance of everything, has been taught to read at his master's expense. These things—in such an eager pursuit of gain as this volume records—are as gratifying to the philanthropist as they are important to the politician; and Mr. Peto has met with his reward. He has been complimented by bishops; he has been honoured in the orations of deans;* parliamentary committees have reported his

* "Mr. Peto was a dissenter," said Dr. Stanley; "and he envied the sect to which he belonged the possession of such a man, and he would gladly purchase him at his own price; and heartily he prayed that he would ere long become a

worth; the lamented protectionist leader bore testimony to his benefits; the press has done justice to his benevolence; senators have delighted to do him honour; the projector of the broad guage thought few could act as Mr. Peto had acted; and all these things prove that Bishop Stanley was right when he so eloquently enlarged upon the Christian virtues of Mr. Peto. This gentleman was born to a fortune, which is not the case with many of the powerful class to which he belongs, who, beginning life as navigators, have become contractors; who, having saved money, have become "gangers," realised capital, and formed contracts, first for thousands and then for hundreds of thousands. These are almost a caste by

member of the Church of England. He (Bishop Stanley) was a churchman, and holding a high office in the church, and believed that in that church was the purest faith; but he was still a catholic Christian, and as such he would hold it a dereliction of his duty if he did not express his approbation, respect, and regard for the exertions used for the moral benefit of railway labourers by Mr. Peto. All down the line he had met with his agents, and had found them not merely giving directions and instructions, but also giving to the men religious and school books for the education of themselves and their children; and thus showing them that education can civilise the mind, reform the habits, and elevate the understanding. The gin shops were left deserted, and the schools were full. The good and exemplary conduct of Mr. Peto's railway labourers under this system deserved to be a tale told three times three with one cheer more; and let it be recorded as a fact of which there could be no denial, not one labourer in the Norwich district had been guilty of misconduct that made him amenable to the law."

themselves. They make fortunes, and purchase landed estates. Many a fine property has passed from some improvident possessor to a railway labourer; and some of the most beautiful country seats in England belong to men who trundled the barrow, who delved with the spade, who smote with the pick-axe, and blasted the rock.

To these Mr. Peto is an exception. The name was known in connexion with some of our most splendid edifices long before railways were thought of. But it may be truly said that although to this peculiar class Mr. Peto is alien, yet in forming a tenth part of the railroads of the United Kingdom, he has converted an ample into a princely fortune. He has purchased the estates, and rebuilt for his own use the family mansions, of peers; he was as ready a few months since to undertake the entire construction of a railway, as he was a few years before to erect a theatre in thirteen weeks; and he who, much less than a quarter of a century previous, handled the trowel or hammered the nail, might have been heard seconding the address on a queen's speech, listened to by gentlemen and applauded by scholars.

There is one more particular to relate of Mr. Peto, and with it the writer will conclude the present sketch. It is in the memory of all that the prospects of that which is known as the Great Exhibition, however triumphant now, wore at the close of 1849 a dark and doubtful aspect. Money was scarce, and croakers were plentiful. The Gurneys and the Barings of the city had not yet come forward, and men found it more pleasant to frame excuses than to pay subscriptions. Its very existence was jeopardised, when Mr. Peto set an example so noble that others were ashamed not to follow it; and it is very characteristic of this gentleman that when he offered the princely sum of £50,000 to meet any deficiency, he begged also as a favour that the fact might not be reported by the commissioners.

CHAPTER X.

MR. MORRISON AND RAILWAY LEGISLATION.—DIFFICULTIES OF THE POST-OFFICE.—INTRODUCTION OF A BILL.—ITS PRINCIPAL CLAUSES.—EXCITEMENT OF 1836.—INCREASE OF RAILWAY BILLS.—TRICKS AND TREACHERY OF RAILWAY PROMOTERS.—INCREASE OF EXCITEMENT.—PARLIAMENTARY CONTESTS.—REACTION.—DISTRESS OF THE COUNTRY.

THE first attempt to legislate by a general bill for railways was made in 1836 by Mr. Morrison, who then moved "that in all such bills it be made a condition that the dividends be limited to a certain rate, and that Parliament reserve to itself the power of fixing periodically the tolls on passengers and goods;" thus attempting to impress on the house a due sense of the magnitude of the change, which, in his own prophetic words, was likely "at no distant period to transfer our chief public conveyances from the king's highways to a number of joint-stock railway companies."

That Mr. Morrison was correct in his premises

there can be no doubt. The history of the past has taught commercial men to little purpose, if it has not convinced them that when a company is prosperous, the directors are indifferent. A share in the New River company is a moderate man's income; but the water is indifferent, and the price high. The discovery to which Winsor devoted a life has produced fortunes, and paid fine dividends; but the charge to the public is exorbitant. The water corporations of the metropolis, after a fierce contention, divided the public between them, and left that public to mourn. The canals had already taught the manufacturing world that an ill-regulated monopoly was ruinous to its subjects. The management of Life Assurance associations was an additional proof that powerful companies required controul or competition. With such examples before the House, it was evident that railways required legislation. The period, too, was propitious. The Great Western was not yet opened; the London and Birmingham but partially so; the bills for other lines had only just been passed; and the entire interest was unable to make any effective demonstration.

The reasons of Mr. Morrison were such as should have addressed themselves to a body of intelligent gentlemen. He said it was important to a mercantile and manufacturing people that the conveyance of goods should be as perfect as possible; that it was difficult to estimate the result of late improvements on the country; that competition had lowered prices in our larger towns, and visited even our villages; that the facilities of travelling had promoted the remarkable movement in our internal industry with which all were familiar. Hitherto, he remarked, a perfect competition had existed in our public roads; every improvement was at once made use of, but in the many railway Acts then before the House no endeavour was made to secure improvement. Another danger was in the prospect of opposition lines; and Mr. Morrison stated in 1836 what is very noticeable in 1850, that the London and Birmingham railway, after spending many millions in its construction, might find a rival rising by its side to compete with its traffic and eat into its profits. The best comment on this remark is the Great Northern.

The principle for which Mr. Morrison then con-

tended was practically allowed by the government; when it limited the profits of the railways, and in many other instances it had received the sanction of the legislature. "For these and a variety of reasons," continued the above gentleman, "I am clearly of opinion that parliament should, when it establishes companies for the formation of canals, railroads, or similar undertakings, invariably reserve to itself the power to make such periodical revisions of the rates of charges as it may deem expedient. It should have the power to examine into the whole management and affairs of each company, to correct what may have been amiss in the former, and to fix the rates of charges for another period of years, always taking care that the proprietors are allowed a fair return for the original outlay of capital, as well as compensation for the risk to which such undertakings are more or less subject." These remarks Mr. Morrison closed by moving: "That in all bills for railways, or other public works of that description, it be made a condition, with a view to the protection of the public interests which might otherwise be seriously compromised, that the dividends be limited to a certain rate, or that power be reserved to parliament

of revising and fixing at the end of every twenty years the tolls chargeable on passengers and goods conveyed.

The proposition was generally well received, and the "honourable gentleman" was called on to move at once for leave to bring in a bill to effect the proposed object. This was done; the bill was read a first time; but before a second reading could take place, Mr. Morrison became sensible of the hopelessness of his task. It was said that no man would purchase a share with such an avalanche hanging over him; that it would ruin all those who were in possession of railway property; that it would create a panic; that everybody would try to sell, and that nobody would buy. It was added, and with some degree of truth, that if the state had done nothing to help, it ought to do nothing to injure them. "What have the government done to promote railways?" said Mr. Herapath. "Have they done a single thing? I am not conscious of one. Have they removed a single impediment?—not to my knowledge; but they have raised several. Have they contributed a single shilling? Rather, I believe, by the intolerable and vexatious oppositions permitted in passing the bills, have been

the cause of spending many hundreds of thousands, which, like another national debt, will prey to the end of time on the vitals of public industry." These were the opinions of one well capable of forming a judgment, and must be received with deference. Sir Robert Peel declared himself decidedly opposed to it. In presenting a petition against the Periodical Revision of Tolls bill, this statesman said, "Such a measure should not be postponed from day to day, and kept up in the shape of a menace against railway speculations. The effect was, that many were deterred from purchasing in railways, that the transfer of shares in most of them had come to a stand-still, and that, in fact, this branch of public commerce was injured and almost paralysed."

Mr. Morrison's reasons for abandoning a bill so important to the well-being of railways, is to be found in the fact "that before the time of the second reading arrived, doubts were entertained in high quarters as to the adviseableness of interfering with new undertakings, by which capitalists might be deterred from embarking in them; and he could look for no support where support was necessary to success."

The question appears plain; and averse as the

writer is to legislative controul over commercial companies, there can be no doubt that in the present exceptional case great good would have resulted to the people and to the proprietary. With such a periodical search, the public would have been safe. However advantageous the competitive principle may be, a sound co-operative principle is far more so. The law which exists for the tradesman, holds good for the company; and a malevolent competition carried on between two great corporations, must be mischievous to both. Monopoly is the cant word of the day; but the public is now stronger than any monopoly; and had the bill of Mr. Morrison been carried into operation, it is difficult to calculate its effects. The whole of the railway companies might have been banded together; railway potentates might have been as self-important as canal magnates; they might have fixed their fares and arranged their times as arrogantly as they pleased; but they would have been powerless to injure the public, while the advantages to their proprietary would have been inestimable. Trains would not have been run at prices which did not pay for the grease used in the wheels; similar hours

would not have been chosen by two lines running into each other's dominions; a Western railway would not have intruded on a North-Western; nor a Great Northern swept away the profits of a Midland. Competitions, contemptible save in their results, would not have been attempted at the expense of millions; lines would not have been made, for which, to use the words of Mr. Robert Stephenson, "there was no more occasion than a coach has for five wheels;" lawyers would not have obtained a bad eminence; surveyors would have remained in their pristine insignificance; useless works would not have been formed; and sixty or seventy millions sterling would have been saved.

In addition to the above abortive attempt, a motion was made by Mr. Harvey, that a committee should be appointed, to which any application for railways having a termination within seven miles of the Royal Exchange should be referred; and that before any such bill was read a second time, the committee should report on the directness of the communication, the probable expenditure, the safety of the public, and the effect upon private property. This, however, was withdrawn.

The scene was occasionally enlivened by some honourable member's alarm for his character. Thus, in the same session, Sir C. Burrell complained that Mr. Cundy, engineer to one of the Brighton competing lines, had used his name in a most reprehensible way. Nor was the charge unworthy rebutting, as Mr. Cundy was accused of stating that Sir Charles had voted for Stephenson's line, because £15,000 had been awarded him for land not worth so many hundreds. "Such an imputation was totally untrue," said Sir Charles, indignantly. Various members gave varying opinions on the subject; Captain Pechell believing "such a trumpery case had never been brought before the House before;" while Mr. Wynn was of opinion "that charges of so grave a nature should not pass unnoticed." Mr. Nicholas Wilcox Cundy was in consequence summoned before the bar of the House, and an investigation was instituted. It appeared, however, that Mr. Cundy had not made the statement on his own authority, but that he had quoted it from a Brighton journal. Mr. Cundy was, therefore, released from his unpleasant position, and the House proceeded to graver affairs.

In the session of 1836, no fewer than thirty-five railway bills passed the legislature, six being for alterations only, while twenty-nine were for new lines, the total length of which was nine hundred and ninety-four miles, at an estimate of £17,595,000.

By 1837 it was discovered that railways had produced the effect of sending a great number of stage coaches from the turnpike-roads. The post-office was placed in unparalleled difficulty. Contractors, disappointed in the passengers they hoped to carry, were unable to fulfil their agreements. The government advertised, but could obtain no offer for places between which they wished to establish a communication, excepting at an increased cost of four hundred per cent. Many villages which demanded postal connexion were compelled to suffer great social evils arising from its absence. When the London and Birmingham railway was opened, seven mails were at once abolished because the contractor could not maintain his engagement. Colonel Maberley, very illiberally, said the railways possessed an entire monopoly against the post-office, and that they seemed inclined to exact what terms they pleased. The question was important, and a

select committee of the House of Commons came to the resolution that as railway companies have it in their power to prevent the transmission of post-office correspondence, the legislature should not only have its attention constantly directed to the subject, but that a bill should be immediately submitted to the house, compelling them to perform all services required by the postmaster-general; and in the event of disagreement as to terms, to submit the case to arbitration.

The bill founded on this contained some very obnoxious clauses; by one of which the post-office authorities might run their own trains on any line without paying any toll; by another, they might remove all obstacles in the shape of passenger or other carriages out of their way; by a third, pains and penalties were denounced on the companies' servants if they disobeyed the government; and by a fourth, the aid of the railway plant and the railway officials was commanded; all these benefits to be remunerated by a consideration for the wear and tear on the rails.

The various companies rose in defence of their privileges. It was in vain they were told that the

mails travelled on the ordinary roads toll free; they very naturally replied "they could not see the analogy, that a common road being common property, paid for by the public, the public had a right to use it. But on the contrary the railroad was formed by private enterprise and maintained by private individuals. The queen had no right over a canal; what right had she over a railway? If troops passed over a private bridge, they were paid for as private persons, why then should a railway be placed in a different position?" And it was added, that "if the crown had certain rights on the highway, it was by virtue of clauses in their Acts of Parliament, but such clauses were absent in railway bills." When the measure was proposed to the House, it met with continued opposition.

Mr. Labouchere said the country was at the mercy of these companies; that they had bound the land in bonds of iron; and that, if the railroads had cost extravagant sums, the country had no right to pay for the mistakes of engineers and speculators.

Lord Sandon put the question on the broad principle of whether the post-office had a right

to take possession of railroads and use them without remuneration.

Mr. Rice warned all railroad directors to beware of opposing the bill, threatening them with more stringent measures if they were so ill-advised.

Sir Robert Peel said—and therein rested the truth of the question—that they were now called upon to repair an enormous omission. The legislature had established a monopoly with which there could be no future competition. The legislature had said to landowners, "you must, for a great public benefit, forego your own will and discretion, and dispose of your lands to these companies;" and Parliament had now the same right to say to railway proprietors, "for a great public benefit you must, to some extent, give up your rights of private property."

The companies were naturally jealous of their prerogatives, without exactly knowing how far those prerogatives went. The government, with the ordinary desire of all weak governments to achieve a petty economy, were disposed to claim rights which no corporation could fairly allow. They wanted to send the letters thrice as quick and thrice as often, for less than the amount which they had paid by mail. They

wished to avail themselves of roads formed at an expense of £50,000 a mile, and maintained at an annual cost of £2,000 or £3,000 a mile without paying any toll. And, however commercially important it may be that letters should be forwarded as rapidly as possible; it is also morally important that the large mass of railway proprietors should not be rendered discontented, and that the government of a great country should not be parties to an arrangement at variance with justice.

Mr. Glyn stated that of all the monstrous measures he had ever read, the bill for the conveyance of mails on railways, as originally proposed, was the most striking: but, that government having listened to the representations made to them, he trusted the measure would now work effectually for the good of all.

The bill eventually passed contained enactments by which railway companies were bound to convey mails at such hours as the postmaster-general should direct; if required, they were to apply separate carriages exclusively to their conveyance; remuneration was to be according to agreement between the directors and the postmaster, and any difference

between them was to be settled by arbitration. Mr. Labouchere distinctly stated that though he had given up his own views in deference to those of the railway companies, yet, if the directors should not afford every facility for the transmission of correspondence, he should introduce a measure to compel compliance. Such was one difficulty besetting the interest in 1838, and for the result of which the proprietors are indebted to the resolute remonstrance of that power which public men, to suit a party purpose, or to raise a party cry, are pleased to term a monopoly.

The memory of those months which range from 1836 to 1837, will long be remembered by commercial men. Companies which engrossed the care and the capital of thousands, were projected. Eleven years had passed since the excitement of 1825; the resources of the country had increased; the only loan which had absorbed her savings had been that of twenty millions for our West Indian colonies; money was lying comparatively idle; the four per cents. had not long been reduced; the current rate of interest was from three and a-half to four per cent.; illegitimate sources of profit were sought

for; the inventor used his arts to excite the rich; companies were once more the fashion, and once more the whole city rejoiced in what it was pleased to deem a sure and solid prosperity. Until July, 1836, with the exception of the London and Birmingham, the Carlisle and Newcastle, the Southampton, the Great Western, and those which have been already chronicled, but few undertakings had been entered into. A host of proposals followed this calm; "and," said the *Edinburgh Review*, "there is scarcely, in fact, a practicable line between two considerable places, however remote, that has not been occupied by a company. Frequently two, three, or four rival lines have started simultaneously." With this increase in the number of new railway propositions, there was an equally sudden rise in the price of the shares of most of the established companies, and the scrip in the greater number of the new projects was either brought out at, or speedily commanded a premium. Unemployed engineers and attorneys, with the whole tribe of jobbers and speculators, were not slow to perceive the advantages they might derive. Public attention had been much occupied by the London and Birmingham and other

great lines. The most exaggerated accounts were disseminated of the wonderful advantages the railways would confer on proprietors. The shares in all continued rapidly to advance; the cupidity of the people was inflamed; the multitude were tempted; the fever extended on all sides; numbers of undigested prospectuses were produced, and with them that extraordinary demand for shares of any sort by which the first six months of July, 1836, were distinguished. The notice attracted by those already in course of construction assisted to draw the attention of capitalists to this new power, and a desire for companies was common.

The press supported the mania; the government sanctioned it; the people paid for it. Railways were at once a fashion and a frenzy. England was mapped out for iron roads. The profits and per centage of the Liverpool and Manchester were largely quoted. The prospects and the power of the London and Birmingham were as freely prophecied. Company after company arose; line after line was projected; million after million was demanded. To this period we owe the success of many of our most important undertakings. Competing lines were

the order of the day, and for the Brighton no fewer than five claimants excited the attention of the town. To doubt the profits of railways was ignorance; to deny their success was madness. They were all called safe and stable investments. They were all sure to pay a large per centage. The convenience and comfort of this mode of travelling were addressed to the public notice. The facilities of communication; the increase of commerce; the bringing mind and mind together; the creating demands for knowledge; the cultivation of the mental capabilities, and the improvement of the physical powers, were ordinary topics of the press and of society. It was said in 1836, in the House of Commons, "there was no subject of a domestic nature which so largely occupied the public attention as that of railways. A greater number of persons was enlisted in their advocacy or in opposition to them; a larger amount of capital was embarked in their furtherance; a vaster extent of property was involved in their prosecution, than in any one other subject." Colonel Sibthorp, with the self-devotion which distinguishes him in the senate, said he considered all railways as public frauds and as private

robberies. The clergy of Hampshire petitioned against the new power, because the rustics kept away from church to see the train pass by; and Mr. Morrison, it has been seen, wisely proposed to the legislature in 1836, that the dividends should not only be limited, but that parliament should be allowed the privilege of revising the tolls every twenty years.

"Our very language begins to be affected by it," wrote one. "Men talk of 'getting up the steam,' of 'railway speed,' and reckon distances by hours and minutes." The story of a gentleman who left Manchester in the morning, who went thence to Liverpool, purchased and took back with him one hundred and fifty tons of cotton, and having sold it, returned to Liverpool on a similar errand with similar success, was a stereotyped story for the press.

"It is not the promoters, but the opponents of railways, who are the madmen. If it is a mania, it is a mania which is like the air we breathe."

Our commerce was to be magnified by the Greenwich railway. The London and Blackwall was to ruin the St. Katherine and destroy the London docks. The Greenwich, in the hour of its excite-

ment, proposed to tunnel the park and to build marble arches adorned with marble busts, while the Commercial, now known as the Blackwall railway, talked, in the plenitude of its audacity, of making the East India House a station for its four projected miles. Three distinct lines were proposed to Norwich. Surrey was entirely mapped and marked out. All the opposition lines to Brighton were at a premium. In one parish of a metropolitan borough, sixteen schemes were afloat, and upwards of one thousand two hundred houses scheduled to be taken down. With some of the most evident bubbles the names of senators were connected. Railroads were advertised to places where no coaches ran. The Marquis of Londonderry stated that in Durham three railroads had been attempted by one projector, all running in parallel lines. One was at par, another was bankrupt, and he believed the third would never pay. The wildest schemes were calmly entertained. One projector proposed sails to propel his engine, and induced a company to try them. Another offered to propel his locomotives with rockets, confidently promising one hundred miles an hour. A third invented a wooden line, to be raised

many feet from the ground to allow a free and uninterrupted intercourse beneath. Railways to carry invalids to bed were advertised, and a safety railway out of reach of injury was proposed. Competition was carried into villages hitherto contented with all which had contented their rude forefathers. The smaller towns exhibited an unwonted business and bustle. High prices could no more be demanded for bad goods; and the tradesman availing himself of railway speed could visit the warehouse of the manufacturer, or the counting-house of the merchant; obtain better articles at less expense, and contribute in a remarkable degree to develope the internal industry of the nation, no less than to excite a general spirit of enterprise.

The ordinary laxity of principle which ever distinguishes such epochs was displayed. Those who had property through which one line was to pass, were told that if they opposed the bill their compensation would be reduced to the lowest possible amount, but that if they petitioned for it, they would be liberally compensated. One gentleman was waited on at his private residence and offered £1,000 not to resist a particular bill. Nor were peers wanting in an unge-

nerous opposition. The estate of a nobleman was near a proposed line. He was proud of his park, and great was his resentment. In vain was it proved that the road would not come within six miles of his house, that the highway lay between, that a tunnel would hide the inelegance. He resisted all overture on the plea of his feelings, until £30,000 was offered. The route was, however, afterwards changed. A new line was marked out which would not even approach his domain; and, enraged at the prospect of losing the £30,000, he resisted it as strenuously as the other.

The projectors generally, however, were not allowed to proceed on their path rejoicingly. They met with the opposition they deserved. The political economist wrote essays to prove that railways would absorb too much of the national capital, and divert it from its more legitimate channels. The bondholders in turnpike roads petitioned that any deficiency in their profits should be paid out of railway receipts. The senator said the demand for labour would be so great as to raise wages and increase prices. The Blackwall railway was opposed because it crossed the road. The coach-owners petitioned against it because it would lessen their profits. Invention was brought

to decry the railway when truth was insufficient. One company, it was said, could not proceed for want of money. Another was deeply in debt to the contractor. The Greenwich was often reported to have fallen in, and as often was it asserted that the whole property was seized under an execution. The country gentleman, it was added, required protection, and not the companies. The tunnelling of Shakespeare's cliff was objected to by the antiquarian as a desecration; but still the projector continued to project, and the public to purchase shares; the engineer continued to make profits, and directors continued to make premiums.

"A needy adventurer takes it into his head," wrote Mr. Herapath, "that a line of railway from the town A. to the town B. is a matter of great public utility, because out of it he may get a great private benefit. He procures an ordnance map and a directory. On the first he sketches out a line between the two towns, prettily curving here and there, and calls it a survey. The gazetteer, directory, and coachman supply him with a statement of revenue, which never fails to be less than fifteen or thirty per cent. He inveigles a secretary with

a few hundred pounds, and induces a solicitor out of practice to join him."

The tricks were as ingenious, if not so plentiful, as at a later period; and innumerable inventions of artful knaves disgraced the supporters, many of whom were men of substance. When it became necessary to have a subscription to the amount of half the estimates, any or everybody was asked to sign who came in the way. The managing directors told the secretaries to apply to any person they thought proper; and one man, enjoying a salary of £60, signed for £35,000; while a second signed it who neither knew nor cared what it bound him to do. By one railway, signatures were procured at ten shillings a-head. The Deptford and Dover contract was signed at four shillings each. A third, being deficient £80,000 of the subscriptions necessary to complete the standing orders, borrowed the amount, and paid it in on account of the company.

In another which obtained an Act of parliament, only £235 was subscribed; and not one of the directors had paid a single shilling on the shares which qualified them for their seats at the board.

The Clarence railway required £200,000, and the sum was procured. The directors found it necessary to borrow £190,000 more, the entire expense being £380,000 for a work which yielded £2,500 a year, or about fifteen shillings per cent.

Another difficulty which beset railroads was the parliamentary contests. In one case £100,000 was spent without any result. In a second, six counsel and twenty solicitors were employed at an expense of £57,000. In a third, where five competing lines obtained, the committee, after being occupied the whole of one session and one month of the succeeding, at an expense of hundreds of thousands, in despair of coming to a just conclusion with evidence which was very conflicting, referred the whole to a military engineer.

The large demands of landowners and leaseholders was another source of trouble. In one instance the removal of a line a very short distance would enable the company to avoid a tunnel, at the expense of £50,000. "Give us," it was said, "the price of that tunnel, and we will withdraw our opposition." Thirty thousand pounds was the reward of this cunning. Hundreds were constantly awarded where

thousands were demanded. A man who claimed £8,000 absolutely accepted £80; and it was forcibly said that no other term than plunderer was due to him who asked whatever he chose, but took whatever he could get.

In the four years which elapsed from 1832 to 1836, about 450 miles of railway were completed, and 350 miles were in progress. The demand for engineers skilled in the iron way was difficult to supply. Great works fell necessarily under the superintendence of persons deficient in the required knowledge. Fantastic novelties were consequently adopted. The rashness of ignorance was often displayed in attempting notoriety. Endeavours to improve were often more fatal than favourable; and the consequence was felt in large calls, heavy loans, and small dividends. The prices and prospects of railways in 1837 may be judged from the fact already stated in this history, that the London and South-Western, with £40 paid up, was then at a discount of £27, and to raise money was compelled to create shares at fifty per cent. discount. The cheques of the Great Western were returned. In the Bristol and Exeter, when £10 was paid, premiums were

offered with the shares to any one who would accept them; the London and Birmingham were more than once at a discount, and one line which afterwards reached £50 premium, was for three years giving away on the stock-exchange. The government in the meantime were singularly supine. The various bills were laboriously contested by promoters and opposers, and the necessary consequence was litigation, extortion, jobbing, bribery, and extravagance, disgraceful in principle and deplorable in practice.

The time of reaction was at hand. Money became scarce; the eyes of the people were open to their folly; and shares of every description fell. Then came that terrible revulsion, when ruin visits the social board, and sorrow desolates the domestic hearth. Men who had lifted their heads in the pride of presumed riches, mourned their recklessness, and women wept that which they could not prevent.

In the city the panic was great. The rate of discount was raised to five per cent. The interest was increased on exchequer bills from three-halfpence to two-pence-halfpenny a day; but they fell to ten per cent. discount. The banking-house of Esdaile & Co.

stopped payment. Consols fell four per cent., and mercantile commodities forty. Merchants with high characters, and worth more than twenty shillings in the pound, could neither sell the goods which loaded their warehouses, or discount the bills which filled their strong-box. But the misery was felt all over England. Distress and suffering in their worst and most protracted forms spread throughout the provinces. The greatest houses were brought to the brink of ruin; others sunk beneath the struggle. The manufacturer found his produce depreciated one-half. The receipts of the custom-house sunk nearly one million in a single quarter. Half the cotton mills of the country were shut up. The skilled artisan and operative were distressed to an unprecedented degree. In Manchester and its vicinity, 50,000 hands were unemployed for six months. At Paisley and its neighbourhood 20,000 workmen were idle. At Glasgow nearly half the labouring classes were starving, and thousands were only kept alive by bounty and benevolence. If these facts are painful to record, how much more painful must they have been to the class whose sufferings are recorded?

The more important cities of England were not behind the metropolis; and York, with its neighbourhood, witnessed an equally undisciplined spirit. It need not be said that in the latter Mr. Hudson was the presiding genius. The inhabitants of Scarborough and Bridlington also attempted a railway; but failed. They of Whitby and Pickering succeeded. Mr. Cundy and Mr. Gibbs endeavoured to form a line between York and London, but both Mr. Cundy and Mr. Gibbs proved unsuccessful. The inhabitants of the former regarded the movements with anxious interest; and as a communication with the capital was very desirable, made attempts which at first produced more meetings than money.

In 1835, Mr. Stephenson projected a railway from Leeds to Derby; and from Derby a further line was proposed to Rugby, by which a railway route would be obtained from Leeds to London.

The citizens of York, with Mr. Hudson at their head, projected and formed another line, which, called the York and North-Midland Company, gave a railway route to London from York; and so energetic were the directors, that in 1839, York

was united with Milford, amidst great rejoicings. The rise and progress of Mr. Hudson is so intimately connected with the railways of the north, and his public career belongs so thoroughly to a later period, that it is unnecessary at present to allude to this interesting portion of railway history more particularly than to indicate that he was laying the foundation of that name and fortune, which, for good or for ill, produced so marked an effect in succeeding years.

[Note]. The panic of which record has just been made, procured an inquiry into the law of limited responsibility. This most important commercial subject was reported on with great skill; and the opinions expressed by various members of the interest it affects, are briefly given, because it is a question which is gaining great consideration, and because

it has been deemed by competent authorities, very uncertain whether England would have suffered so severely or so frequently from such excitements as those of 1825, 1836, and 1845, under a different system. In France the law of partnership, "*en commandité*," exists, enabling the master and his assistants to work together. The former often gives the latter small shares in the business, knowing that, while there is no risk to himself, he secures the earnest though selfish assistance of his subordinates. Habits of thrift and temperance are thus encouraged; a system of kindly co-operation is insured; and the moral effect is ever found to be gratifying. In New York any person may contribute any sum without risking the remainder of his fortune; being responsible only to the amount he has jeopardised. In Ireland a similar partnership Act also existed, under the title of "An Act to promote trade and manufacture, by regulating and encouraging partnerships," by which it was arranged that "anonymous partners should not be subject to bankrupt laws, or to any greater loss than the amount of their subscriptions." In our own colony of the Mauritius also, the same law is in being, and is found

to work well, and to the contentment of all. The chief objections arrayed against this custom are,

1. That it would give rise to fraud.

2. That it would lead to overtrading.

3. That it is not required in this country, where capital is readily found for every profitable undertaking, and credit for all who deserve it.

The opinions of commercial men differed on the topic. Mr. Thomas Tooke allowed that the difficulties of the present system constituted a serious evil; but that "the leaning of his opinion was on the whole against the expediency of introducing the law of *commandité* into this country."

Mr. George Warde Norman "was disposed to take the affirmative side."

Mr. Samuel Jones Loyd thought the present state of the law of partnership very imperfect, and believed also that in the peculiar condition of this country "the advantages of the *commandité* system would be less and the evils greater, than in most other countries."

It is a vexed question, into which it is difficult calmly to enter. But it is one which affects our large middle class very seriously; and there are

various evils it would alleviate. It would encourage a legitimate spirit of commercial enterprise; it would enable a man to lend a portion of his savings without risking all. And more than this, and that which, perhaps, is more pertinent to the present work, is the fact that it would empower every man in England to subscribe a small amount of his capital in sound co-operative or joint-stock speculations, without the constant dread of confiscating every penny of which he is possessed. It has been seen that the railway and other companies of 1836 bore terrible witness to the destruction which the absence of limited partnership occasions. It was given in evidence that where a man of substance was morally only responsible for a few hundreds, he was glad to give thousands to another person to take from him the risk he had legally incurred. It was the fear of this law which both then and at a future period led the public to act in so fraudulent a manner. It was this law which induced gentlemen to write in other persons' names, with other persons' signatures. It was this law which produced applications for shares in the names of minors; it was this which made clergymen responsible for amounts they

were not capable of paying; which made the annuitant part from his annuity, and which produced most of those serious evils that ever result from speculative excitements, and the feverish alarm which follows them. Whether the abrogation of the present system, and the introduction of a new law of limited partnership into this country would be beneficial to commerce, is doubtful; but that it would mitigate the evils which flow from the present plan of railway and other Joint Stock companies—previous to their incorporation—cannot admit of a moment's doubt.

The opinions in favour of the law of limited partnership were as follows:—

Lord Ashburton thought it would bring additional capital into commerce.

Mr. Norman believed that the unequal distribution of capital in this country required it.

Mr. Senior asserted that it would cause much capital to be judiciously employed.

Mr. Bothamley believed it would induce respectable persons to join Joint Stock companies.

Mr. Duncan, who, perhaps, has been more extensively engaged in these companies than any other

person, stated his strong impression that "Joint Stock companies *never would be respectable generally, or respected,* until the law was altered to allow companies to be formed of the nature of the *commanditè* and *anonyme* partnership in France."

END OF VOL. I.

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